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No. 29

4-D Effective in Sagebrush Control, USDA Tests Show

Chemical Gets Near
100% Kill in Large
Scale Experiments

WASHINGTON — Chemical spray control of sagebrush on western ranges has proved an effective part of established cultural and grazing management practices in U.S. Department of Agriculture experiments.

The organic herbicide 2,4-D is recommended by USDA for controlling this unpalatable plant, which covers millions of acres in the West. In 10 years of large-scale tests on range-lands in the Lassen and Modoc National Forests in northern California, 2,4-D not only proved near 100% effective against the major species of western sagebrush but was low enough cost to be of practical use to farmers and ranchers as a supplementary control method, USDA reported July 11.

Donald R. Cornelius and Charles L. Shamm, USDA range conservationists, who carried on the experiments, found that 2,4-D cannot all-

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Russell Coleman Tells Southern Officials of Role of Fertilizer in Solving Farm Problems

ROANOKE — R. W. Ludwick, deputy in charge, Feed and Fertilizer Control Office, State College, N.M., was elected president of the Association of Southern Feed and Fertilizer Control Officials at the 14th annual meeting of the group held here recently.

E. W. Constable, state chemist, Department of Agriculture, Raleigh, N.C., was elected vice president, and Bruce Poundstone, head, Department of Feed and Fertilizer, Kentucky Agricultural Experiment Station, Lexington, was reelected secretary-treasurer.

M. P. Etheredge, State College, N.C., retiring president, presided over the sessions, which were attended by 60 control officials and 55 representatives from industry.

Bruce Cloaninger, head, Department of Fertilizer Inspection and Analysis, Clemson, S.C., was selected

Steel Strike Threatens Benzene Supply for Pesticide Production

By JOHN CIPPERLY

Croplife Washington Correspondent

WASHINGTON, D.C. — The current steel strike, now more than two weeks old and regarded as likely to continue for some time yet, is looked upon with concern by certain segments of the pesticide trade because of a possible shortage of benzene, normally supplied in considerable part by the steel industry.

Observers in Washington noted that settlement of the steel dispute is not likely to be reached for perhaps a number of weeks at the outside, thus jeopardizing much of the benzene supply through a major remaining portion of the insecticide season. Makers of DDT, 2,4-D and other pesticidal materials of which benzene is a component, are reported to be doing some serious measuring of supplies to see if either finished goods or the supply of raw materials can be stretched through a long period of retarded production.

Estimates made by representatives of the industry indicate that the steel industry provides roughly 40% to 50% of the benzene used by the pesticide trade in the manufacture of many products. The U.S. Department of Commerce, in its monthly chemical and rubber report for June, said that in the first quarter of 1956, coke-oven operators produced 49,017,000 gallons of benzene out of a total of 84,438,000 gal. produced in that period from all sources.

This steel strike now seems to cut off about one month's total availability of benzene for the production of DDT at one of the most critical periods of the cotton and corn crop production when protection against various pests would be needed urgently.

To the extent that producers of DDT have anticipated this steel tie-up is not known here and consequently there is no way of estimating stockpiling of benzene by

pesticide producers. However, according to recent U.S. Department of Agriculture reports, production of DDT in the crop year Oct. 1, 1954 through last Sept. 30 totaled 110,550,000 lb., compared with 90,712,000 lb. in a corresponding period a year earlier.

Production during the five months of October, 1954 through February, 1956 totaled 53,909,000 lb.

Stocks of DDT on hand last Sept. 30 totaled 29,250,000 lb., compared with a 27,386,000 lb. inventory on Sept. 30, 1954, according to USDA.

But the nature of the pesticidal chemical business with its sometimes thin inventories in distribution channels might indicate that formulators may find themselves without adequate supplies for the major crop protection in their areas if they do not have orders on the books which will assure them of adequate supplies for the farmers.

This indicated tightening supply of DDT may eventually lead to an allocation or rationing of deliveries to customers particularly in regions where steel industry production of benzene is a big local or area market factor.

For example, in the southeastern cotton belt, the U.S. steel plant at Birmingham, Ala. is down, along with other steel industry units. This Birmingham plant may be seen as the big source of benzene for the producers in this cotton belt area. Consequently, the southeast may be a greater casualty for DDT supplies than in other areas where petroleum sources of benzene are a larger proportion of the overall supply of this component material.

Focusing attention on this impact
(Continued on page 17)

Gypsy, Brown-Tail Moth Regulated Area Extended

WASHINGTON — Additions to the gypsy moth regulated area in Connecticut, Maine, New York and Vermont are made in a revision of quarantine regulations and supplementary instructions effective July 20, the U.S. Department of Agriculture has announced.

The new orders also combine into a single, continuous gypsy moth regulated area the new area plus the former gypsy moth generally-infested and suppressive areas in the New England States and New York. The brown-tail moth regulated area is also extended in the New England States.

Under one of the revised regulations, the chief of the Plant Pest Control Branch of USDA's Agricultural Research Service is authorized to issue administrative instructions

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\$45,000 Appropriation Voted in Iowa For Stepped-Up Hopper Control Work

DES MOINES, IOWA — Approval of a \$45,000 appropriation for the purchase of insecticides and manpower to control a serious infestation of grasshoppers in the southern three tiers of Iowa counties, was granted July 9 by the Finance and Control Committee, an interim group which considers such requests when the state legislature is not in session. This move has resulted in a greatly stepped-up control program in the grasshopper-infested area, according to Dr. H. M. Harris, state entomologist, in a telephone interview with Croplife.

Although the state's activities do not include spraying privately-owned farm lands, the farmers themselves are reported to be doing an energetic job of controlling the insects. Recent rains, the first in many months, have afforded the grasshoppers good eating along roadsides and in ditches which in effect delayed their advance into fields. Thus, the welcome moisture not only acted as a grasshopper stopper, but gave promise of good crops. This, in turn, afforded a real incentive for the farmers to go all out in an effort to halt the hoppers before they do great damage to corn and beans which had not yet been ruined by drought.

The state crews are continuing to apply a number of insecticidal formulations to the areas adjacent to highways, and state and county roads. Materials being used include dieldrin, toxaphene, heptachlor, aldrin, malathion, lindane and methoxychlor. The latter three are being recommended particularly for control in gardens and yards.

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Anhydrous Production Shows Gain in May

WASHINGTON — May production of synthetic anhydrous ammonia totaled 310,422 short tons, a gain of 1% from 306,172 short tons in April, according to the Bureau of the Census.

Output of ammonium nitrate, original solution (100% NH_4NO_3) in May totaled 180,430 short tons, compared with 202,975 short tons in April. Production of phosphoric acid (50% H_3PO_4) increased to 320,688 short tons in May from 312,054 short tons in April.

Russell Coleman, executive vice president, National Plant Food Institute, Washington, outlined to the control officials the role of commercial fertilizer in solving three farm problems.

He listed these problems as (1) maintenance of farm income, (2) disposition of surplus farm commodities and (3) maintenance of soil productivity.

Using statistics from experimental
(Continued on page 20)

AT DEL-MAR-VA MEETING

Efficient Fertilization Factors Listed by Virginia Agronomist

Editor's Note

The accompanying manuscript was presented recently at the annual convention of the Del-Mar-Va Peninsula Fertilizer Assn. by Dr. H. L. Dunton, head, agronomy department, Virginia Polytechnic Institute, Blacksburg, Va. Dr. Dunton entitled the talk, "What Every Fertilizer Salesman Should Know." A story of the convention appeared on page 1 of the July 9 issue of Croplife.

I would like to talk with you briefly about a few of the basic factors that we try to take into consideration when making fertilizer recommendations. It will not be possible to cover all angles of this, but I hope that a few thoughts may show the trend that we are trying to follow in efficient fertilization.

The fertilizer program in Virginia, until recent years, endeavored to, first, show the farmer that plant food, or fertilizer, is essential on practically all soils in Virginia for efficient crop production. I believe this has been fairly well accomplished.

The second step endeavored to get more nearly the correct amount of fertilizer used, which meant that the program was built more around the idea of getting some fertilizer used and not as much on the consideration of the right kind and amount. I feel that these steps were necessary and, perhaps, the soundest that could have been taken at that time, because practically all soils were deficient in plant food for efficient crop production.

Today, on many farms the situation is quite different. We must use what we use and any increase more efficiently. What I will have to say may create more problems for the control officials and the industry and the college since it will mean that more grades will likely be used on each farm.

In other words, the old idea of one grade or analysis of fertilizer for corn has passed. I am firmly convinced that if we survey any area in a county, we will find that there are situations in which practically every grade of fertilizer on our present list should be used.

Today, what do we consider in trying to make a fertilizer recommendation?

We consider the soil as the manufacturing plant for crop production in agriculture. The soil, as a manufacturing plant, can be compared with industrial plants and there are many similarities. We have wide differences in soils as we have many different kinds of industrial plants. However, there are, in my opinion, two big differences between the soil as an agricultural manufacturing plant and the industrial plant. First, I feel that the soil is more complicated and harder to understand; and, secondly, the soil is the only manufacturing plant I know that improves with use if properly managed. All others deteriorate with time, regardless of how well they are managed.

Soils do vary widely in their characteristics and abilities to produce. These facts must be taken into consideration. We must learn more about the soil and we are spending, at our institution and in other institutions a lot of money studying the characteristics of this manufacturing plant, the soil. As an example, we now have two well-trained men in our department, who are studying and characterizing the colloids in the different soils of Virginia. I may add

that they are finding some most interesting facts relative to this.

Due to certain types of colloids in a particular soil, they are finding that this soil doesn't lose plant nutrients by leaching as rapidly as another soil. Another example of considerable interest is the fact that we are now producing alfalfa, and have been for three years, on a soil with a pH of 5.6. A few years back, we would have said this could not be done.

As we study this soil further, we may find it is not necessary to raise the pH as high as it is on some other soils in order to grow alfalfa successfully. Therefore, we expect to continue, as rapidly as feasible, to look into these different soils and to find out more about them.

We must recognize that certain soils have limited capabilities and, therefore, cannot produce good returns on large amounts of fertilizer. In other words, if we consider fertilizer as the raw material going into the manufacturing plant, the soil, then we readily see that certain soils cannot use as much fertilizer efficiently as certain other soils. This may be due to many reasons, which we cannot go into at this time.

The soil, we feel, must be considered carefully in any program of efficient fertilization.

The second major consideration in making an efficient or good fertilizer recommendation is the past treatment of the soil. Is this soil in a high or low state of production? Has it been producing alfalfa, or pasture, or continuous corn or just what? If we know the past treatment and the effect of that treatment on the soil, it will help make a more accurate recommendation for fertilization.

The third consideration is the soil test. We test approximately 50,000 samples of soil per year in Virginia. We use the soil test results as an aid in determining fertility level and fertilizer needs, but not as the sole factor in making fertilizer recommendations. Too often, the soil test is used as the sole basis for making the

recommendation and, I am sure, this is a mistake. However, if the soil test is properly interpreted it can be an aid in making a good recommendation.

The next major consideration, in making the fertilizer recommendation, is the crop to be grown. Different crops have different requirements. I can illustrate what I am trying to say by describing a recent visit to a farm. The fertilizer for spring use had been purchased. Tobacco, alfalfa, corn, pasture and millet were being fertilized in the spring. One analysis of fertilizer had been purchased. Yes, it was a tobacco grade and analysis. This same grade and analysis were being, or were going to be, used for all crops.

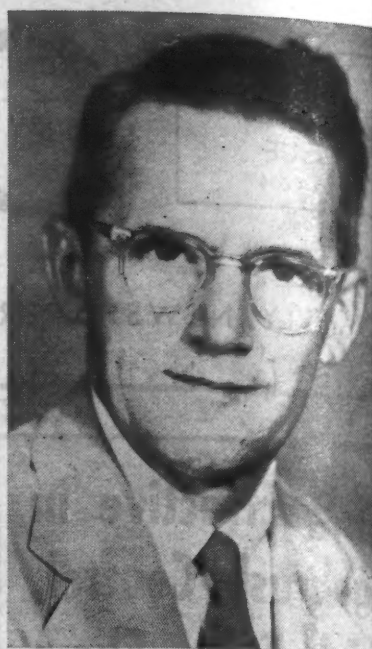
We made a study of the soils, the past treatments and tested the soils on this farm and our recommendations would have included not one grade or analysis, but six grades and analyses, in order for this man to have fertilized most efficiently, and, we felt, to secure the best results from the money invested. This, I recognize is a rather extreme case, but I am afraid we would find cases that, at least, resemble this on many farms.

I was quite pleased when I visited another farm, not ten miles from this farm, which was growing essentially the same crops and he had six different analyses of fertilizer for these crops. He had studied carefully the situation on his farm and had tried to purchase the grade or analysis that he felt was best for each crop and situation.

In order to make a good fertilizer recommendation, we need to consider the economic conditions generally and on the individual farm. This is a most important consideration.

Finally, we have reached the point where it is necessary to consider what variety of a particular crop is going to be grown before we make the recommendation. We know, today, that different varieties of tobacco should be fertilized differently on the same soil and under the same general conditions. We are developing varieties of other crops that respond differently to fertilization. As we develop more and better varieties, this will become of even greater importance.

The farmer must consider all factors concerned in efficient fertilization if he expects to compete successfully and stay in the business today.



Frederick R. Anspach

Frederick R. Anspach To Direct Pennsalt Fertilizer Sales

PHILADELPHIA — Frederick Anspach has succeeded S. R. Coats, resigned, as sales manager of the Thomas fertilizer division of Pennsalt Chemicals, R. R. Hull, general manager, has announced.

Mr. Anspach joined the Thomas organization as a soil chemist in 1939 following graduation from Rutgers University. In 1946, after four years' naval service he returned to the Paulsboro plant as production supervisor. He has been a member of the sales staff for eight years and has been in charge of domestic sales since January 1956.

In service Mr. Anspach advanced to the rank of lieutenant commander and served in the Caribbean and Pacific theaters. Mr. and Mrs. Anspach and daughter Amy, seven, live at 402 Beech Ave., Woodbury Heights, N.J.

Brea Appoints Aqua Ammonia Dealer in Arizona

LOS ANGELES — Appointment of Pacific Guano Co., Tolleson, Ariz., as a certified Brea aqua ammonia dealer was announced July 12 by R. H. McGough, manager of agricultural chemical sales, Brea Chemicals, Inc.

According to Mr. McGough, the appointment marks a major extension of Brea representation in Arizona east of Yuma.

Worth Lyle, manager of Pacific Guano's Tolleson division, announced that they will market the 20% nitrogen fertilizer solution to its service areas in the Salt River Valley and Pinal County, which include growing areas around Buckeye, Casa Grande, Chandler, Eloy, Glendale, Mesa, Phoenix, Tolleson and Toltec. From Pacific Guano's marketing facilities at Tolleson and Toltec, ample supply will be maintained to meet year-round fertilizer requirements for local growers, Mr. Lyle said.

"We are introducing the Brea program to our growers in time to schedule their summer and fall application programs," he said.

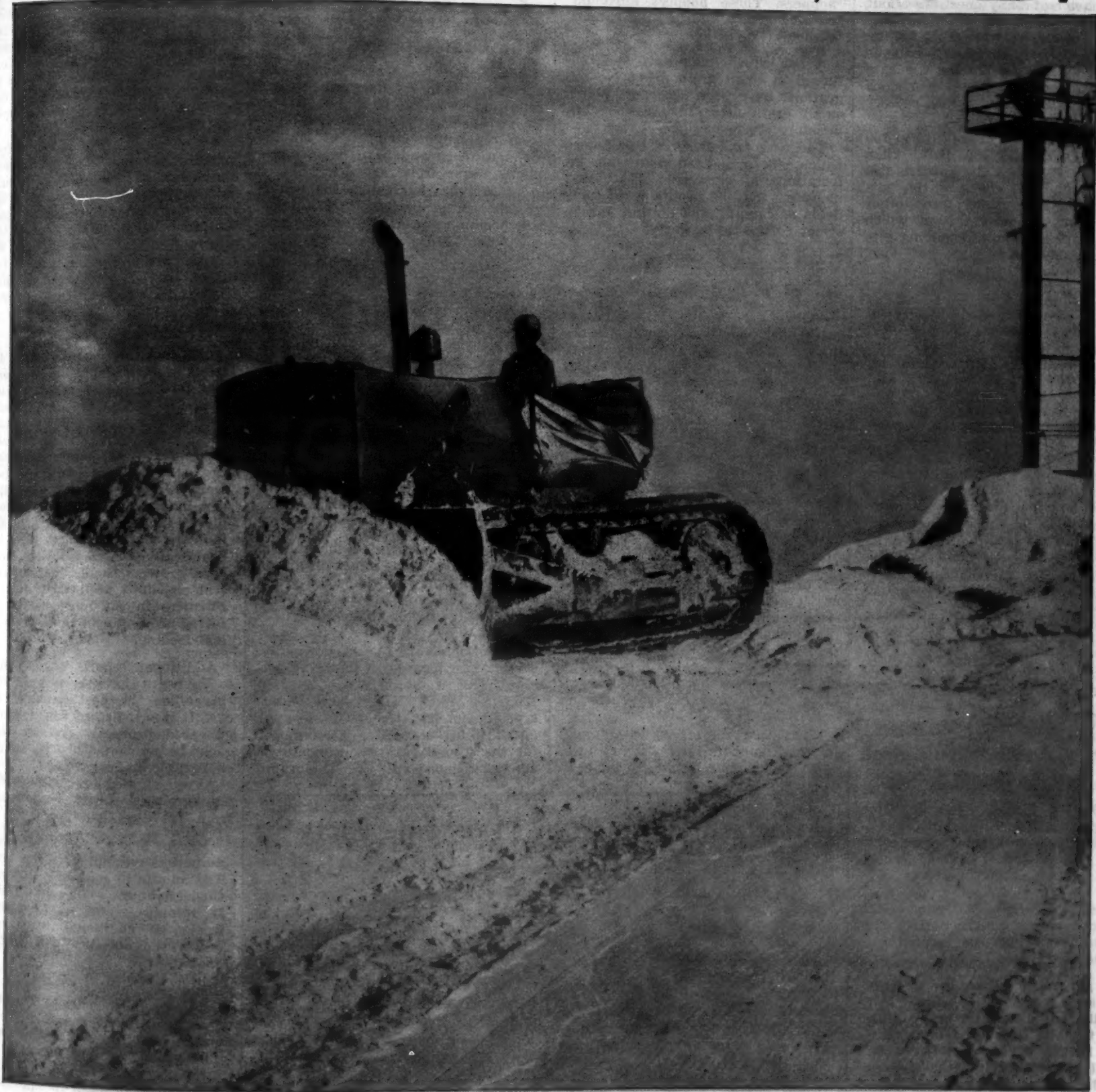
Store Purchased

PORTLAND, ORE. — Crown-Centennial Mills, Inc., Portland, has announced the sale of the Pacific Seed and Feed Store, Coos Bay, Ore., to Charles Peterson and Orville Tabin. The transaction was effective July 1. The purchasers currently operate Eaton's Garden Supply Store, Coos Bay, Pacific Seed and Feed stores at Coquille, Grants Pass and Medford, Ore., and Eaton's Feed Store at Myrtle Point, will continue as subsidiaries to Crown-Centennial Mills, Inc.



DEL-MAR-VA AWARD—Claude E. Phillips, third from left, head of the agronomy department of the University of Delaware, is shown above receiving the annual award of the Del-Mar-Va Peninsula Fertilizer Assn. From left to right are Elbert N. Carvel, Valliant Fertilizer Co., Laurel, Del., who made the presentation; Robert A. Fischer, Milford (Del.) Fertilizer Co., association president; Mr. Phillips, and H. L. Dunton, head of the agronomy department at Virginia Polytechnic Institute. The award was for "greatest contribution to agriculture in the tri-state area in 1955." In making the presentation, Mr. Carvel cited Mr. Phillips' work with the 100 bu. per acre yield corn club, the 40 bu. per acre yield soybean clubs and the pasture improvement programs. A story of the convention appeared on page 1 of the July 9 issue of Croplife.

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INSECT, PLANT DISEASE NOTES

Grasshoppers Offer Most Serious Threat in Missouri

COLUMBIA, MO.—Grasshoppers continue to be the most serious insect threat over the entire state. Numbers are exceptionally high, even though damage is not too severe in most areas as yet.

In areas where grassland and waste land vegetation is still in good condition, 'hoppers will not tend to congregate immediately in crops. In the drier sections, however, severe crop damage can be expected as soon as the hoppers get a little more size on them.

We have had many questions about controlling hoppers in the home garden. There are two ways of getting this job done. The garden can be sprayed with malathion at the rate of 1 lb. an acre, or 6 level tablespoons of 25% malathion wettable powder in a gallon of water.

The other method of control in the garden is poisoned bran bait. When such bait is used in the garden, also spray around the edges of the garden at the same time, spray other areas near the garden from which hoppers are leaving and moving into the vegetables. If this is not done, there is no way to adequately protect the garden itself.

Chinch bug damage is severe in some areas. Farmers should be on the watch for it and use controls before a great amount of damage has been done.

We are having a good many soft maple trees stripped this year by green striped maple worms. These insects are not hard to control, if a person has equipment which will get the spray up in the tall trees. It's late to just now be spraying for bagworms, but a lot of people haven't gotten the job done yet. These insects are especially numerous this season, and many cedars will have to be sprayed to avoid extensive damage.

Clay colored leaf beetles, about 3/4 inches long, are being found on a good many different ornamentals. They are leaf feeders, and can do considerable damage when present in large numbers.—Stirling Kyd and Geo. W. Thomas.

Borers, Grasshoppers, Chinch Bugs Appear in Illinois

URBANA, ILL.—Optimum time for applying DDT for corn borer control is now past except in extreme north and northeast Illinois, where a few moths are still laying eggs (July 6). In the northern tier of counties and those bordering Lake Michigan, near-optimum control may be obtained if fields are treated during the next several days.

In general, if tassels are appearing and borers are behind leaf sheaths and tunneling into stalks, it is too late to treat. If many are still in the whorls and few have bored into stalks, insecticides may still be used if numbers warrant.

In most fields, applications were much better timed this year than in previous years. Farmers are to be complimented for delaying treatments until the time to obtain optimum results. Because of correct timing, borer control will be better this year than in the past.

Where moisture has been low, immediate results have looked unsatisfactory to some people. But with heavy dews or rains, borer reduction will continue for some time. Furthermore, as the borers leave the tassel area and migrate down into the leaves and the lower part of the stalk, they will contact the DDT and further kill will occur. It is impossible to determine accurately the de-

gree of control unless untreated sections have been left in a treated field. In view of extremely high borer populations in many areas, 70 to 80% control may still mean that a few borers in each stalk will live to maturity.

Observations of many treated fields show these statements to be true regardless of form or method of applying DDT.

Small grasshoppers along fence-rows and ditch banks were noticeable this week in the north one-third of the state. Occasional fields of legumes also have localized areas with large numbers of small grasshoppers. These hoppers must be controlled before they spread through the fields.

A few chinch bugs have been observed in small grain fields. No migrations have been reported. Watch small grain fields in areas of low moisture for migrations.

The first few fields of sweet corn which silk may have noticeable infestations of earworms. Control measures may be profitable in early fields of canning and market garden sweet corn.—H. B. Petty.

Corn Borer, Leafhoppers Threaten Valuable Crops

COLLEGE PARK, MD.—Potato leafhopper populations on alfalfa are quite high in Allegany and Frederick Counties, averaging from 1 to 15 per sweep. Small grasshoppers are conspicuous in alfalfa fields in Queen Anne County. Adults of the lesser clover leaf weevil and clover root curculio are abundant in second growth red clover in Frederick County and several species of leaf and webworms are also present. Insects have held back the growth, feeding on all parts of the plant above ground, killing young stems. Rainfall is aiding the clover.

European corn borer damage to sweet and field corn is heavy in Frederick and Howard Counties. Out of 300 plants examined in a sweet corn field in Frederick County, 201 were infested with corn borer. Corn growers on the eastern shore should keep a close watch for second generation eggs.

Corn earworm larvae were found in small numbers in Howard County. Corn root aphid has damaged corn

in some Kent County fields. The plants and leaves are stunted and clusters of aphids are found on the roots. Large numbers of ants attend the aphids.

Potato leafhoppers are prevalent on beans and potatoes in Allegany and Washington Counties. Asparagus beetles are moderately abundant on asparagus brush in Allegany, Kent, and Montgomery Counties.

Mimosa webworm infestation is general in southern and central sections of Maryland. Japanese beetles are quite abundant on roses and other ornamentals in many sections of the state.—Theo. L. Bissell and Wallace C. Harding, Jr.

Southern Iowa Overrun With Grasshoppers

AMES, IOWA—Grasshoppers are still our most threatening insect. (See follow-up story on page 1.) A few soybean fields in southern Iowa have been completely stripped of leaves. In many corn and bean field edges, plants are severely ragged.

As oats are harvested, the heavy grasshopper populations in oat fields are beginning to move to adjacent corn and beans. Spray around oat fields just before harvesting then treat the entire field as soon as crop has been removed.

We now have adults of both the lesser migratory and differential grasshoppers. There are still millions of small grasshoppers.

A few failures of aldrin and heptachlor to kill grasshoppers have been reported, but in most cases applications were below recommended amounts. A few failures were caused by treating in the middle of a hot and windy day. Treat during cool, calm mornings and evenings.

The recent rains in southern Iowa will have no adverse effect on grasshoppers, but may provide some green material for them to eat. Let's not be there with too little too late. Treat now!

Corn Borers are maturing rapidly. First pupae have been found at Ankeny. This is 10 days earlier than 1955. At Ankeny 50% of the borers are 5th instar larvae (full-grown) and 40% are 4th instar. First moths for the second generation should be emerging about July 18. This rapid

Delaware Entomologist Presents Facts on Mosquitoes for Citizens to Think About

NEWARK, DEL.—L. A. Stearns, extension entomologist at the University of Delaware, has written an explanatory note to his fellow Delawareans who have been complaining about the abundance of mosquitoes in the area, under the title, "Just Facts, Folks, About Mosquitoes!"

He says that whenever mosquitoes appear in greater numbers than usual, there is demand that "something must be done about them."

"This clamor for action is ardently supported by the local press in new articles and editorials," he says, "sometimes including alarming statements on probable outbreaks of mosquito-borne diseases—yellow fever, malaria and encephalitis. Once printed and read, much of such fiction is readily accepted by the uninformed public as fact."

"We agree; 'something should be done about them'. And, in anticipation of the need for facts on which to base a sound mosquito-control program, the University has been studying this problem for exactly 25 years—the most intensive, continuing, field and laboratory investigation of this kind for any area of equal size in the entire United States.

"For example, since 1932, a total of 2,214,822 adult mosquitoes has been collected at strategic points and identified under the University's microscopes.

"Now, let's dispose of some of the fiction. No Yellow Fever has occurred in this Country since 1905. The vector, *Aedes aegypti*, is lacking in Delaware. There has been a precipitous, nation-wide decline in malaria incidence since 1945, and the disease has become rare in this State. The vector, *Anopheles quadrimaculatus*, is generally present here, but in negligible numbers. The same statement covers both *Culiseta melanura* and *Mansonia perturbans*, vectors of eastern equine encephalitis. Outbreaks of these diseases are a remote possibility.

"There are at least 40 kinds of mosquitoes in Delaware. However, freedom from annoyance depends entirely on effective control of the salt-marsh species. This can only be achieved by operations at the state level. The financing of such an effort depends on you. Just a few of the facts, folks; if there are any questions, we have the answers."

development may indicate a healthy 2nd brood.

In fields examined for borer infestation in Greene, Carroll, Audubon and Cass Counties, we found from 8% to 90% of the plants infested. In the Boone County experiment total borer numbers are up from last year's first brood. The average of the 32 fields under observation is 45% infested. The range is from 0 to 95%.—Earle S. Raun.

Minnesota Expects More Grasshoppers in State

ST. PAUL, MINN.—Grasshoppers are at extremely high levels throughout most agricultural areas of Minnesota. Reports of destructive threatening populations of 'hoppers have come in from all parts of the state. Hoppers are still only 1/2 to 3/4 grown, and are as yet concentrated in and around hatching beds. When they mature and acquire wings, they will spread to cultivated crops as well and will cause severe damage if control is not undertaken. We can see nothing at this time that will reduce potential damage except chemical control, properly applied.

Where an average of ten or more hoppers per square yard is noted, damage can be serious. Fifteen or more hoppers can destroy 50% of a forage crop, and thirty-five per square yard can strip an area bare. Most alfalfa fields examined in S.E. Minnesota, and elsewhere, have from fifteen to thirty hoppers per square yard at the present time; some averaging as high as fifty to sixty per square yard.

The average percentages by districts of corn plants showing borer leaf feeding are as follows: South Central—20%, Max.—80%; Southwest—26%, Max.—88%; Central—12%, Max.—24%; West Central—8%, Max.—10%. Few unhatched egg masses were found this past week (July 6) and it appears that egg hatch can be considered complete. Light trap collections also indicate that borer moth flight has practically ceased. Market sweet corn growers should continue control measures until about July 13. Farmers in the more heavily infested areas should check fields for leaf-feeding.

Additional reports of leaf injury to soybeans have been reported to this office the past week. In each case it was indicated that the injury appeared primarily on one side of each bean row. This is definitely chargeable to high winds.

A report of blister beetles doing damage to soybeans was received from Traverse County.

Recent heavy rains have created numerous mosquito breeding areas. The mosquito nuisance is general throughout the state and will likely remain so for at least three weeks. If additional heavy rains occur, the nuisance will continue unabated.

The most effective mosquito control program includes several types of larval (immature aquatic forms) control supplemented by control of adults. Since such well-rounded programs are not carried out in Minnesota, control of adult mosquitoes can rarely be completely successful but can offer a measure of protection.

Concentrations of the corn leaf aphid (*Rhopalosiphum maidis*) have been reported on barley in the Roseau area. Another aphid, the English grain aphid (*Macrosiphum granarium*) has also been collected from small grains in this region.—J. W. Butcher.

Boll Weevil on Increase, N. Carolina Report Says

RALEIGH, N.C.—The boll weevil seems to be on the increase in the lower Piedmont. Please note Rowan, Montgomery and Lincoln Counties. Only a few squares were present

the fields and many had received only one treatment. Montgomery's high infestation showed 2 fields with 80% square damage and 1 with 30.

Most counties reported only a moderate infestation in most fields. Please note that while the majority of the fields in the state are showing 0 to 10% infestation, there are a few fields in most all counties showing above 10% infestation. In other words, there are fields in most counties showing high infestations and are threatened with severe damage. The problem is how to get the ones needing protection treated and a good control program continued throughout the rest of the season.

Mites were reported in many counties during the week of July 5. While the infestations were still rather localized, some fields are showing a general infestation.

Bollworms are being found in only a few fields. Nothing indicates a general bollworm infestation in any county.

Except for the lower Piedmont counties, weevil populations remained rather light. It should be noted, however, that some fields in most all counties are showing high populations. Conditions must be watched carefully as more weevils can come from hibernation in these areas.

Flea Beetles Reported in Utah Vegetable Areas

LOGAN, UTAH—Flea beetles are doing serious damage to gardens and sugar beets in northern Utah, according to Dr. George F. Knowlton, extension entomologist at Utah State Agricultural College. He issued a warning to growers not to wait until injury to growing plants has become serious before starting control measures. Crops affected include potatoes, cabbages, radishes and sugar beets.

Spotted Alfalfa Aphid Said to be Increasing

FORT COLLINS, COLO.—A report by the Colorado insect detection committee here early in July, said the spotted alfalfa aphid is increasing in large numbers in Prowers and Bent counties. Trace infestations also have been noted in Pueblo, Crowley, and Otero counties, the report says.

It is also reported that the seed corn maggot is causing extensive losses in some seed corn fields in Pueblo County. Growers there report as high as 25% stand loss.

Aerial sprayers are obtaining excellent control of grasshoppers in Las Animas County, the report says. About 45,000 acres have been sprayed, and spraying is in progress on 200,000 acres in Douglas County.

Lygus Bug Populations Counted in Arizona

PHOENIX, ARIZ.—Agents Vincent and Robertson report that a good deal of Lygus injury is being found in the Stanfield and Maricopa areas. They also state that counts on the pest were found to be 5 to 10 around Casa Grande, about 4 at Coolidge and 5 to 25 at Eloy.

In the Eloy area, they also found scattered infestations of leaf miners, leaf perforators, and an occasional stink bug. Bollworm counts were up to 5 to 10 in many fields. Several fields in Casa Grande were found to be infested with mites as well as bollworms. Predator counts were also up in most cases.

Graham County agent John Sears reports Lygus counts up to 16 per 100 sweeps. Some spraying with ground machinery has already started. A few stink bugs have also been found in the San Jose district.

Maricopa County agent Carter reports that insect activity has increased noticeably in many areas during the past week (July 5). Heavy infestations of Lygus are showing up in Buckeye, Tolleson,

Litchfield, Peoria, Deer Valley, and the Mesa-Chandler-Higley areas. Bollworms are reported to be heavy in several areas and stink bugs and leaf perforators have appeared in the Buckeye area. Leaf rollers are also causing serious damage in some sections of the county.

USDA workers report aphid populations are generally light, but there are a few isolated instances of heavy infestations. They further report that Lygus counts in Maricopa range from 0 to 15. Black fleahopper counts are down. An increase in the number of bollworm eggs was noticed.—J. N. Roney.

Codling Moth Activity Damages Indiana Fruit

VINCENNES, IND.—Second-brood codling moth larvae began entering apples July 5. Records from bands on tree trunks in an unsprayed orchard show that first-brood larvae left the

apples in larger numbers during the past week (July 10) than during the previous week; consequently, adult activity will be high during the next 10 days.

Orchard mite populations continue to vary between orchards. In orchards where European red mites have not been thoroughly controlled, apple trees are showing a moderate amount of mottling.—D. W. Hamilton.

Rains in Kansas Help to Slow Grasshopper Spread

MANHATTAN, KAN.—Populations of spotted alfalfa aphids appear to be building up in the southern and central areas of the state. Localized infestations with populations at levels requiring controls were reported from some areas of Barton, Pawnee, Ford, and Finney counties, southwest Kansas. No aphids were found in Potawatamie, Nemaha, Brown, or Jack-

son counties, northeast, this last week. (July 7)

The grasshopper control program continued in Comanche County, southwest, this past week. Only an approximate 8,000 acres were sprayed; shortage of aircraft, establishment of new landing strips, and unfavorable weather conditions, being the limiting factors. Severe populations continue on rangeland of Comanche, Clark, Barber, and Kiowa counties where control measures have not been applied. Where insecticides have been applied, grasshopper populations have been reduced from counts of 30 to 50 per square yard to counts of less than one (1) hopper per square yard.

During the past week, (July 7) there has been a light migration of 'hoppers back into some of the previously sprayed areas and populations have increased back to about 3 to 5 per square yard. Both of the dominant range species in this

(Continued on page 21)

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Resistance of Boll Weevils Persists in 1956, Report Says

BATON ROUGE, LA.—Boll weevil resistance to chlorinated hydrocarbon insecticides reported in 1955 has apparently persisted into the 1956 season, according to a special release issued by the Louisiana Agricultural Experiment Station on July 5. This conclusion was based on results of topical application studies conducted into July.

Although this is true in some areas of the state, the report points out that the resistance is not a factor throughout Louisiana. "In many areas of the state, the boll weevil has not developed resistance to the chlorinated hydrocarbon insecticides, and these materials will continue to give satisfactory results," the statement concludes.

The report, entitled "The Status of Chlorinated Hydrocarbon Resistance in the Boll Weevil in Louisiana," was prepared by John S. Roussel, R. V. Bielarski and Dan Clowder. They summarize information obtained to date, on overwintering boll weevil populations collected in several locations of Louisiana and on first generation boll weevils reared from infested squares collected in the same area.

In discussing the persistence of resistance into the 1956 season, the report states that the LD 50 (amount of toxicant necessary to kill half of the pests treated in experiment) obtained with boll weevils taken out of hibernation during November, 1955, showed that this population was highly resistant to endrin whereas it was readily controlled with Guthion. However, weevils collected in the same general vicinity in March, 1956, showed a decreased dosage required to control 50% of the population with both endrin and Guthion. "This weevil population continued to show a high degree of resistance to endrin," the statement said.

CSC Promotes Two in Market Development

NEW YORK—Eugene M. Seidel has been appointed western manager for the market development department of Commercial Solvents Corp., it has been announced by Dr. F. E. Dolian, manager of the department, a unit of the petrochemicals division.

Mr. Seidel, until recently Midwest field representative, will make his headquarters at the company's district office in San Francisco.

A graduate of Indiana University, Mr. Seidel served for five years in the chemistry department of that institution. Earlier he spent several years in industry. He joined CSC in 1954.

Replacing Mr. Seidel as Midwest field representative will be Marion E. Tislow, who will be located at Terre Haute, Ind. Mr. Tislow, a graduate chemical engineer, has been associated with Commercial Solvents Corp. since 1951, and most recently served in the technical service section of the market development department.

AACCO Announces Personnel Changes

NEW YORK—The American Agricultural Chemical Company has announced the following personnel changes:

R. M. Richey formerly division superintendent of the south eastern division becomes responsible as division superintendent of the western division.

H. B. Houghtaling formerly superintendent of Cleveland Works becomes responsible as division superintendent of the south eastern division.

Eastern Research Laboratory Formed By Dow Chemical

MIDLAND, MICH. — The Dow Chemical Co. has announced the formation of its eastern research laboratory at Framingham, Mass., and the appointment of Dr. Fred W. McLafferty as its director.

Dr. R. H. Boundy, vice president and director of research, said the new laboratory will be located initially in facilities at the company's Framingham operations. He added that the laboratory is an important part of Dow's over-all plans for the growth of its research program.

The eastern research laboratory will be responsible for fundamental research on a long-range basis in various fields of interest to the company, including the areas of organic and inorganic chemicals and plastics, and will also carry on analysis and testing work, Dr. Boundy said. The laboratory's activities will be closely coordinated with company-wide research operations, and its technical staff will be expanded as additional personnel is required, he pointed out.

Dr. McLafferty received his Ph.D. degree in 1949 from Cornell University. He joined the company's spectroscopy laboratory in Midland in 1950. He has been closely associated with the development of analytical applications of mass spectrometry and vapor phase chromatography.

Silver Top Study To Be Released

PORTLAND, ORE.—A survey and recommended method of handling fescue seed crops to avoid silver top, a thrip-fungus disease which causes serious damage, is expected to be released within a short time at Oregon City, according to Clive Cook, county agent. Mr. Cook and Rex Warren, Oregon State College agronomist, will try and determine by these findings what combination of burning stubble, spring spraying and fertilization program should be used by fescue growers in Clackamas County.

Silver tip has caused some damage to fescue seed crops this year although losses have been held under that of the previous year. However, many crops this year failed to set seed heads and were mowed for hay while others showed fair recovery from last year's blight due to growers' extra efforts.

Some fields burned last fall and sprayed this spring show normal seed production. Mr. Cook said one field viewed showed silver top infestation in strips not reached by DDT spray but it was noted that this field was not burned last fall. Mr. Cook says it seems that burning of stubble is an absolute necessity in controlling this disease.

1955 Hopper Control Work Saves Texas Ranchmen Almost 3/4 Million Dollars

COLLEGE STATION, TEXAS — A 1955 grasshopper control program in Texas resulted in a net saving to ranchers of almost \$750,000, according to the Texas Agricultural Experiment Station.

The program was started by extension entomologists in cooperation with county agents and personnel from the Plant Pest Control Branch of U.S. Department of Agriculture after damaging infestations of hoppers appeared in many Panhandle counties.

More than 800,000 acres of Texas rangeland were sprayed at an average cost of 65¢ an acre. In areas where the rangeland was not treated, grass was destroyed and would not support livestock. In treated areas grass increased in growth up to 200%.

"If we value grass saved at \$1.50



AT PACIFIC NORTHWEST MEETING—Scenes from the Regional Fertilizer Conference sponsored by the Pacific Northwest Plant Food Assn. are shown above. In the top photo is Dr. I. E. Miles, agronomist for Olin Mathieson Chemical Corp., Jackson, Miss., addressing a luncheon session. Lower left shows, from left to right, Dr. Emil Truog, University of Wisconsin; B. R. Bertramson, Washington State College, and Vernon C. Bushnell, Bureau of Reclamation, Boise, Idaho. At lower right is Robert H. Allard, Wilbur-Ellis Co., Seattle, who was elected treasurer of the association at a meeting of the board of directors.

New Attendance Record Set at Northwest Conference; Dealer Days Being Scheduled

YAKIMA, WASH.—The annual Regional Fertilizer Conference sponsored by the Pacific Northwest Plant Food Assn. brought out the largest attendance of any similar event yet held, with registrations totaling 257. (A report of the conference appears on page 1 of the July 9 issue of Crop-life.)

The board of directors voted to hold the 1957 mid-summer conference at Portland, providing satisfactory hotel and meeting arrangements can be made.

The board also decided to hold two Dealers' Days in Washington—one east of the Cascades and the other in Western Washington. Idaho fertilizer manufacturers also requested that similar days be set up in that state, one in North Idaho and one in South Idaho.

Frank Meeker, president of the association, appointed Frank Taylor as chairman of Western Washington Dealers Day; Sid Martin in charge

of arrangements for Eastern Washington and Ben McCollum, in charge of Idaho arrangements.

It is proposed to have these in late September or early October. Previously arrangements had been made for a continuation of Dealers Day at Oregon State College at Corvallis.

Karl Baur, Pacific Supply Cooperative Assn., was elected to the board of directors replacing Robert Finch, resigned because of removal to California. Robert H. Allard, Wilbur-Ellis Co. of Seattle, was elected treasurer replacing Mr. Finch. Mr. Allard has also been appointed chairman of the Convention Committee. The convention will be held at Harrison Hot Springs Hotel, Harrison Hot Springs, British Columbia, Nov. 7-9. Lee Fryer has been appointed program chairman for the annual convention.

The board of directors also authorized a study of cost of manufacturing and sales of mixed fertilizers and simples, the study to get under way immediately.

Following the conference at Yakima, a display of fertilizer machinery and fertilizer spreading equipment was held.

SBA Loans

WASHINGTON—Approval of business loans to two agricultural chemical firms has been announced by Small Business Administration. The loans are \$250,000 to Agriform Co., Inc., Bakersfield, Cal., and \$28,000 to G & O Fertilizer Co., Cherokee, Iowa.

BLISTER BEETLES

AMES, IOWA—Conditions which led to the development of a large grasshopper population have boosted the current infestation of blister beetles throughout Iowa to the level of serious concern. Harold Gunderson, extension entomologist at Iowa State College, said three species of the insect are prevalent—the ash gray, striped and black blister beetles.

Minnesota Field Visitors See Foxtail Control

ROSEMOUNT, MINN. — Several chemicals are proving effective in killing giant foxtail, a serious weed in Minnesota fields, it was shown at the University of Minnesota's annual agricultural experiment station today here. The event was attended by over 500 persons.

Minnesota agronomists showed experimental test plots where 5 lb. of TCA per acre — the recommended treatment for controlling giant foxtail — did a good job of killing the weed in flax. When the chemical was applied in spring, cost for the TCA treatment was around \$2.50 per acre of chemicals, it was stated.

Plots where a half pound and one quarter pound of dalapon were used also looked promising in controlling foxtail. Agronomists said that the cost is less than the TCA treatment and more tests will be made before a final recommendation will be recommended.

In corn and soybeans, CDAA gave good foxtail control without any crop injury.

Visitors also saw results of alfalfa fertility trials, a continuous corn demonstration now in its fourth year, soil erosion tests, wide row planting, comparisons of rotational pasturing and soiling and seedbed preparations.

J. M. MacGregor, university soils specialist, said that heavy, one-time fertilizer applications for alfalfa don't pay off as well as small and more frequent treatments. At Rosemount, alfalfa that got 1,000 lb. of 0-20-20 per acre at seeding time yielded 19.1 tons during the next five years. But when the same amount of fertilizer was split into five annual spring applications, the fields yielded 1.8 tons more hay over the same 5-year period.

Dr. MacGregor also told how plots on a 9% slope fared in heavy June rains. These slope plots at the Rosemount station have devices that measure soil and water loss from run-off. After the combined heavy rainstorms of June 14 and 15 this year, a corn plot had lost 6 in. of water and at least two tons of soil per acre.

On June 18 a second heavy rain caused another 7-ton soil loss from the already water-saturated corn plot. But hay plots on the same slope at the Rosemount station lost only 47 lb. of soil per acre so far this year. This means that hay strips between rows of corn on slopes are a big help in saving soil and run-off water, Dr. MacGregor said. Farmers normally shouldn't lose more than four or five tons of soil per acre annually from any corn field, he said.

Benefits of Spray Curing Alfalfa Noted

BERKELEY, CAL. — Spray curing alfalfa fields with chemicals before threshing will help improve the rate of germination of this small-seeded legume, according to scientists at the University of California.

This type of spray curing has been shown, in a seven year experiment, to have reduced the damage from strong winds and seed shattering. And in addition this type of spray curing with chemicals plus combining is faster than the older method of cutting and windrowing the crop.

Luther G. Jones of the College of Agriculture has been able to reduce seed loss from as much as 17% of the alfalfa seed submitted for certification in 1948 to only four-tenths of 1% of the seed submitted last year. Production during the same period has gone up from 450,000 lb. a year to an estimated 86 million pounds.

Insecticidal-Fungicidal Compound Synthesized

NEW YORK — The Central Research Laboratories of American Smelting & Refining Co. and E. F. Houghton & Co. have succeeded in synthesizing new compounds which are said to possess the water repellent properties of conventional silicones and the fungicidal and pesticidal properties of the arsenicals.

Known as arsonosiloxanes, the compounds are believed to have particular value for use in damp locations or in humid atmospheres to protect materials from deterioration due to moisture and insect attack. Electrical insulations, canvas enclosures and leather products are a few of the materials which might well be protected by the arsonosiloxanes.

A variety of additional applications of the new compounds is being investigated.

Anhydrous to Be In Spotlight at Nebraska Meeting

LINCOLN, NEB.—Anhydrous ammonia and other nitrogen fertilizers will be highlighted at a meeting to be held Aug. 28-29 under the sponsorship of the Agricultural Ammonia Institute at the Nebraska Agricultural College here.

M. D. Weldon, Nebraska extension agronomist, will be in charge of the program.

Members of the Nebraska staff who will take part are: Glenn W. Lowery, assistant agronomist, who will discuss the fertilizer calendar, pointing out how fertilizers can be used to advantage on various crops the year around; August F. Dreier who will compare the different nitrogen carriers and their effects on corn and wheat; R. A. Olson, associate professor of agronomy, who will discuss the

various phosphate fertilizers; Prof. H. F. Rhoades, who will present an estimate of Nebraska's fertilizer needs, and Delno Knudsen, assistant extension agronomist, who will explain how fertilizer recommendations, based on soil tests, are intended to produce crop response and also build up and maintain soil fertility as needed.

Out of state speakers will be Dr. Floyd W. Smith, professor of agronomy, Kansas State College; J. A. Stritzel, associate extension agronomist, Iowa State College, and Dr. J. M. MacGregor, associate professor of soils, University of Minnesota.

There will be a field demonstration of the application of anhydrous ammonia in intermediate wheatgrass sod and also in corn stubble, where the corn crop will have been cut for silage. Several different types of equipment will be in operation. The demonstrations will be supervised by L. W. Hurlbut, chairman, Department of Agricultural Engineering, University of Nebraska.



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**Two Promoted in
Votator Division
Of Girdler Co.**

LOUISVILLE—John E. Slaughter, Jr., vice president of the Girdler Co., Louisville, has announced two promotions in the Votator division, which he heads.

Boyd B. Mahon, Jr., has been appointed assistant sales manager. He was born in Louisville and attended the University of Louisville. Before joining Girdler in 1948 as a sales representative he was a member of the Reynolds Metals Co.'s sales staff. In 1953 he won the Votator division's sales quota award, given annually to the sales representative with the best record.

Harold E. Huber has been appointed manager of technical sales. Mr. Huber was born in Louisville and attended the University of Kentucky, where he received a B.S. degree in industrial chemistry and a M.S. degree in organic chemistry. He began his business career with the Standard Oil Company of Indiana, in 1938. He was engaged in exploratory research and pilot plant work before joining Girdler in 1943 as chief process engineer. Prior to being elevated to his present position he was a member of the technical sales department.

Girdler is a division of National Cylinder Gas Co., Chicago.

Girdler's Votator Division designs and manufactures processing apparatus and designs and erects complete processing plants for the fatty oil, food and chemical industries.

BIG WHEAT YIELD

RUDOLPH, TENN.—Austin Mann of the Tundo Rudolph community in Haywood County, Tenn., surprised himself recently when he combined 600 bu. of wheat from 15 acres. He was expecting a 20 bu. per acre yield and got 40. Fertilizer used was 200 lb. of ammonium nitrate as a top dressing.

**New Labor Agreements
Improve Firm's Position,
IMC President Says**

CHICAGO—With the signing of new labor contracts by International Minerals & Chemical Corp., which cover three fourths of the corporation's mining and manufacturing personnel, International now is in the most favorable position in its history for uninterrupted production, according to a statement by Louis Ware, president.

"It is significant," he said, "that these contracts have been made in the major production, sales volume and profit divisions of the corporation."

Agreements were made recently with unions representing production workers at the corporation's potash mining and chemicals operations at Carlsbad, N.M., for two-year periods. In the industrial minerals division, a three-year contract has been negotiated with workers at Kona, N.C., and last month a two-year agreement was signed with the workers in the potash chemicals plant at Niagara Falls, N.Y.

Recently other new agreements were signed with workers in the phosphate minerals and phosphate chemicals divisions in Wales and Mt. Pleasant, Tenn. These also encompass the corporation's new installation at Godwin, Tenn.

Each of these is a two-year agreement. Three years remain in a four-year agreement reached late last year with the phosphate minerals division in Florida; at that time a two-year contract also was negotiated with the phosphate chemicals division in Florida.

Each of these agreements, Mr. Ware said, provides for continuous operation by the inclusion of "no-strike" clauses. The agreements do not include provisions for re-negotiation of wage adjustments or basic contract changes during the life of the agreements such as are found in many labor contracts.

"These agreements place the corporation in the advantageous position of being able to create and maintain longer range sales programs and assure improved production efficiencies. To the employees they provide greater security in the form of steady employment and good wages. The benefits accruing from these longer term agreements also may be reflected in the communities where the corporation is a large employer of labor," Mr. Ware said.

**William M. Hardy, 60,
Soil Conservationist, Dies**

MEMPHIS, TENN.—William Montelle Hardy, one of the nation's first soil development engineers, died of a heart attack July 6 at his home here. He was 60.

Mr. Hardy was born in Gates, Tenn., moving here in 1953 from Nashville. He retired in 1954 as chief of the Soil Conservation Service of the U.S. Department of Agriculture in Tennessee.

Known as the "father of soil conservation in Tennessee" he helped organize the division in 1935. He had been serving on the advisory committee of the Wolf River Watershed Assn. after serving as its director several years.

The W. M. Hardy Conservation Award in his honor has been given the past five years to the group of county supervisors doing most to aid soil conservation in their areas of Tennessee.

HORTICULTURE BUILDING

NEW BRUNSWICK, N.J.—Work has started on the addition to the horticulture building at the Rutgers College of Agriculture. The annex will more than double the laboratory, classroom and office space of the present building. New greenhouses and a parking lot are included in contracts amounting to \$1,039,059.

**Acreage of Cotton
In Cultivation Down
3% From Year Ago**

WASHINGTON—The acreage of cotton in cultivation on July 1, 1956, is estimated at 16,962,000 acres, according to the Crop Reporting Board. This is 3% less than the 17,506,000 acres in cultivation July 1, 1955, and compares with the 10-year average of 22,746,000 acres.

The 1956 allotment of 17.4 million acres is about 4% less than the 1955 allotment of 18.2 million acres. Acreage in cultivation this year is equal to 97.3% of the allotment. This percentage compares with 96.4 last year, 92.4 in 1954 and 85.9 in 1950. The 1938-43 average was 86.2%. State changes in acreage from last year are in general agreement with shifts in allotments.

In the Carolinas and Georgia, unfavorable weather resulted in considerable replanting. Stands there are only fair and the crop is somewhat later than usual. In the central belt the early season was variable but has been generally favorable and the crop is making good progress with fields well cultivated and plants fruiting rapidly in early areas.

While moisture in most of Texas was generally adequate for planting and germination, scattered localities had inadequate moisture for planting. As of July 1 irrigated cotton was very good but dryland crop prospects were extremely variable. In south central Texas, where rains have been negligible since early May, prospects are poor with some acreage being diverted to the soil bank. Soil are dry in the southern low rolling plains with all dryland acreage needing rains. The crop is making excellent progress in the far-western cotton states.

Emergence of boll weevils has been very heavy. In early areas of the Cotton Belt, boll weevil infestation was increasing rapidly in untreated fields in late June and is a serious threat unless controlled. Insecticide are being widely used and weather conditions have permitted effective applications so far.

By July 1 the acreage of cotton diverted to the soil bank was negligible in all states. Abandonment of the 1955 acreage in cultivation July 1 from natural causes was 1.3% with an additional 1.9% removed for compliance with allotments. Natural abandonment for 1946-55 averaged 2.5%.

**USDA Announces
1957 ACP Program**

WASHINGTON—The 1957 Agricultural Conservation Program for sharing with farmers and ranchers the cost of carrying out certain approved public-interest conservation practices was announced July 9 by the U.S. Department of Agriculture.

In connection with the announcement, Paul M. Koger, administrator of USDA's Agricultural Conservation Program Service, emphasized that "ACP is a continuing long-range program of conservation cost-sharing and should not be confused with the conservation programs enacted into legislation this year. The Soil Bank Program and the ACP are complementary, not competing programs," he said.

While the ACP for each successive year is called a "new" program, actually it is a continuing program which has been in operation for 20 years. However, it carries a "new" authorization for funds each year—the 1957 Congressional authorization is \$250 million—and revisions and adaptations are made annually to meet current conservation problems. The 1957 program will be only slightly different from the 1956 program currently in operation.

**Selling Ideas**

Feedstuffs, an associated publication of Croplife, has prepared a 16-page Merchandising Handbook for dealers interested in getting a greater volume of sales and profits from animal and poultry health products. In the Handbook will be found practical merchandising ideas successfully used by retail stores.

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LER—Pruit Simms of Pruit Simms & Son, Decatur, Ala., top photo selling insecticide to a customer in front of a neat display. The view of the rack is seen in the lower photo. Note the large amount of merchandise they hold.

FARM BELIEVES:

Merchandising Display Is Several Extra Salesmen

P. NELSON
Special Writer

Pruit Simms and son, of Pruit Simms & Son, Decatur, Ala., display is the equivalent of extra salesmen

highlighted by some displays in all departments—fertilizer, insecticide and pet store is pay-as-you-go. When a customer comes to this roomy, well-lit and well-lighted farm store, he can easily spot various products because many of them are in display units, or have "talking signs" or both.

For example, the insecticide display is a very attractive one. It is a very complete display because of its size, completeness. The display is built up of lumber, is about four feet high and has four large step-up platforms. It is stained and varnished and has a pleasing sheen. It is a display of merchandise that is kept clean, attractive and facing the main entrance. Whether he is a cotton farmer or a gardener, a customer looking at this display knows he'll find

some insecticide there which he needs. The size of the display, too, Mr. Simms believes, gives the suggestion that here are some products which the customer should use to control insects and other pests, so that he can get a better crop.

Many sales are made from this mass display, and as a result the Simms do a large volume on insecticides. But, good merchandisers that they are, they have other smaller insecticide displays, too.

One of them is with a garden fertilizer island, for the Simms have found that some customers will buy insecticides at the same time they fertilize, plow and plant a garden. Some customers know standard insecticides that they use on gardens every year, and they buy in advance.

The firm uses hand made signs with wooden backgrounds for display at its bulk seed pails and barrels. The hand painted signs, identifying certain seeds are tacked on the sticks and then the sticks are thrust into the bulk seeds. These signs are really "talking signs" for they tell the prospect what kind of seed is in each container, thus helping to make the sale. Through identification of seeds on such signs, many a customer will walk over to a container and inspect

(Continued on page 12)



SHOP TALK

OVER THE COUNTER

FOR THE DEALER

By EMMET J. HOFFMAN

Croplife Merchandising Editor

The average agricultural chemical dealer operates a highly diversified business. He has become diversified more by accident perhaps than by plan. Whichever it is, he will usually also sell feeds, seeds, petroleum products, hardware, machinery, livestock and poultry equipment, dog foods and in some cases even groceries.

Since agricultural chemical sales tend to be seasonal in nature, the dealer in this business desires to take on other lines of merchandise to fill in during the "off-season." Likewise, managers of farm chemical stores tend to have diversified backgrounds from the standpoint of experience, education and training. Often the farm chemical dealer will be found doing business in a building that is both unattractive and poorly designed for efficient operation. On the other hand, there are many modern, progressive stores which are a credit to the farm chemical trade.

Another characteristic which applies to most farm chemical dealers is that they have competition from other dealers. The fact that it does not take a fortune to become a dealer may account for the situation in which there is considerable competition among several dealers in a community.

Credit is another factor most dealers must face. Since this is a credit economy, it is usually difficult for the dealer to be on a strictly cash basis. So far as we know there are no figures showing what percentage of the farm chemical business nationally is done by credit but no doubt it is sizable.

Extra services, such as providing free soil tests, delivery of merchandise and recommendations for use of products, seem to be common practice with many successful dealers. These services are found to be attractive to the customer and serve to hold him, once he is sold.

Most dealers do a limited amount of advertising and such advertising is spread over other items of merchandise as well as farm chemicals. Studies show that over three-fourths of farm stores do some advertising, the majority of these spending a portion of their advertising budget in buying space in the local newspapers.

One recent survey of farm stores shows that advertising expenditures vary indirectly with the volume of total sales. Four percent of those who advertise reported spending less than \$100. Their sales were less than \$100,000 (average \$96,875). Those who spent \$500 to \$600 sold over \$200,000 (average \$221,430) and those who spent \$1,000 to \$1,500 had a sales volume exceeding \$350,000 (average \$370,000). Finally, those who spent more than \$2,500 had a sales volume of about \$750,000.

It must be recognized that there are several factors governing the size of a business such as capital investment, size of area served, number of points of services, diverse lines of merchandise handled, age of the firm, type of management and form of organization. The fact remains, however, that there appears to be a direct correlation between the amount

(Continued on page 14)

Pasture Fertilization Boosts Market Grade, Weight Gain of Steers

BATESVILLE, ARK.—Market grade of steers produced should be taken into account as well as beef gains per acre when comparing one pasture grass against another. The same holds true in comparing one pasture fertilization system against another.

That was brought out during a series of group visiting days held recently at the University of Arkansas' Livestock and Forestry Branch Experiment Station here.

A comparison was drawn at the visiting days between fertilized and unfertilized Bermuda grass pastures. For example, it was reported that unfertilized Bermuda grass pasture has produced an average gain of 74 lb. per acre. Applying 200 lb. of 20% superphosphate jumped production up to 285 lb. of beef gain per acre, while use of 600 lb. of 20% superphosphate resulted in 345 lb. more beef per acre.

At the same time, market grades of steers were increased by fertilization of Bermuda pastures. Steers on unfertilized pastures averaged from utility to low commercial in grade when sold. Those on pastures receiving the low rate of phosphate graded from commercial to low good, and those on pastures fertilized at the heavy rate of 600 lb. per acre graded between commercial and good. The total benefit from fertilization was much greater than the comparison of beef gains on the different Bermuda pastures would indicate, it was pointed out.

Defoliation Reaches New High in Texas During 1955

COLLEGE STATION, TEXAS—Defoliation of cotton was practiced in Texas last year on a much wider scale than ever before, according to the Texas Agricultural Experiment Station.

The saving to farmers on machine harvesting one third of the crop at \$20 a bale, using 1,547 spindle pickers and 19,524 strippers, is estimated at \$33,750,000, the station said.

It also reported that in 1955 naphtha oils for spot-oiling Johnson grass was used in 104 counties on 73,637 acres. Lateral oiling with herbicidal naphtha was carried out in 41 counties on 14,617 acres.



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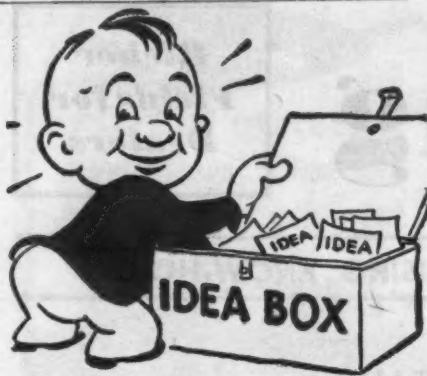
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What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6442—Promotion Program

Information about the new marketing program for its products is available from Diamond Black Leaf Co. The promotion centers around more than a score of printed pieces suitable for distribution to the prospective buyer and user and scheduled on radio, television and in newspapers and magazines. A number of new products and package designs are also announced by company officials. To secure more complete information about the program, check No. 6442 on the coupon and drop it in the mail.

No. 6441—Spray

A new form of calcium arsenate which can be applied as a low gallonage spray instead of a dust has been developed by General Chemical division, Allied Chemical & Dye Corp., for cotton boll weevil control. According to company officials, growers using standard cotton spraying equipment can now get the full benefit from calcium arsenate since the spray form is less wasteful, gives longer residual effect, and better insect control than the conventional dust which has been used for generations. The new product is claimed to eliminate drifting arsenical dust and is being sold under the name of General

Chemical high suspension calcium arsenate. It is said to be compatible with other cotton insecticides and can be used in combination sprays to control a variety of pests. To secure more complete details check No. 6441 on the coupon and mail it to Croplife.

No. 5490—Time-Zone Guide

A guide to time-zone and daylight saving time differences in the U.S. has been published by U.S. Industrial Chemicals Co., division of National Distillers Products Corp. The time map measures 8½ by 7¼ in. and is of a size that will fit conveniently under a desk glass or on a bulletin board. It shows at a glance the states using daylight saving time and also the states in which most cities of 25,000 population or over use daylight saving time. The guide is available without charge. Check No. 5490 on the coupon and mail it to secure the guide.

No. 5457—Bag Reinforcement

A new sewn multiwall paper shipping sack featuring reinforced end construction has been announced by Bemis Bro. Bag Company. The reinforcement consists of strips of kraft paper between plies at the bag's top

and bottom, said to give the effect of an extra ply at the points where most sewn multiwall bag breakage occurs. The new bags, called "Strength-end" by the company, have been undergoing tests with a variety of products. The reinforcing strips in the bags are spot pasted to adjacent plies of paper to hold them in position, making them an integral part of the bag construction. Thus, the strips may be applied to both sewn valve and sewn open mouth bags. To secure more complete details check No. 5457 on the coupon and mail it to this publication.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6438—Turf Fungicide

The Upjohn Co. has announced a new turf fungicide, Actidione RZ, for the control of large brown patch, melting-out, fading-out, dollar spot and pythium. Company officials say that the product, when primarily tested on golf courses with the cooperation of golf course superintendents, provided in excess of 95% control of the five major diseases. Excellent protective and curative properties were claimed in widespread geographical locations. Secure more complete details by checking No. 6438 on the coupon and mailing it to Croplife.

No. 6439—Iron Deficiency Booklet

A revised booklet entitled, "Perma Green Iron 135," has been prepared by the Refined Products Corp. The booklet states that "iron deficiency in plant life is present in nearly every region of the earth" and claims that the company's corrective product is an "effective organic iron chelate for all soils." It is recommended for vegetables, fruit, flowers, shrubs, trees and turf. Sections of the booklet are devoted to the "what, why, where and how" of the product, suggestions for use, application methods, color reproductions showing adequate and deficient minerals in soils. On the last two pages containing photographs are found reproductions of transparencies showing results of foliar application with an iron chelate. Secure the booklet by checking No. 6439 on the coupon and mailing it to Croplife.

No. 6434—Vermiculite

Vermiculite as a fertilizer conditioner is described in a new publication of the Vermiculite Institute. The

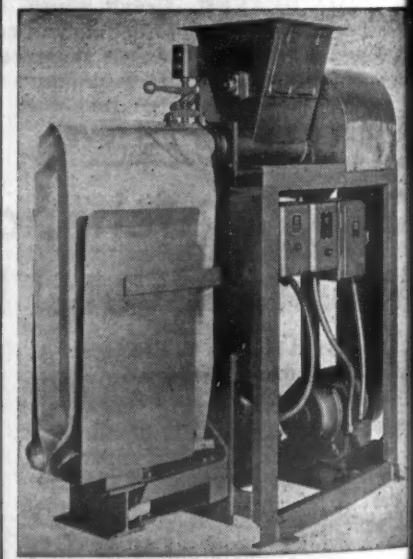
institute's announcement states: "This inert, fireproof mineral weighs only 10 lb. per cubic foot, contains less than 1% moisture, and is non-hygroscopic. It contains about 27 million particles per pound, is highly absorbent, and is packed in lightweight bags that make for easy handling and storage." The material is processed in some 40 plants in the U.S. and Canada. "Vermiculite for Agriculture," with a special insert for fertilizer manufacturers, is available without charge. Check No. 6434 on the coupon and mail it to Croplife.

No. 6435—Booklet on Native Grasses

Section two of a booklet series on pasture and range plants has been published by the Phillips Petroleum Co. Entitled, "Native Grasses, Legumes and Forbs," the 40-page booklet describes 32 plants and pictures them in full color. The introduction states that the company's goal with the booklet is "to broaden the knowledge of pasture and range plants." It adds that "all of us depend far more than we realize on range vegetation as the basic source of our own and our nation's strength, vigor and vitality." An invitation is issued to visitors to observe the results of "good management and use of fertilizers on native and introduced grasses," at the Phillips agricultural demonstration project, Foraker, Oklahoma. Secure the booklet by checking No. 6435 on the coupon and mailing it to this publication.

No. 6430—Volumetric Packer

The automation principle applied to a bag packer in a manner that employs the bulk material being packaged to act as the motivating power source is one of the features of the new model VP Volumetric packer, recently announced by the H. L. Stokes Co. A company official states: "We are proud to announce this unit, with its special features, as a machine that almost thinks for itself, assuring uniformity of content volume with automated settling of material. We feel



that it offers higher productivity, and surer volume control with an absolute minimum of care." Complete data on the unit is available without charge. Check No. 6430 on the coupon and mail it to secure more complete details.

No. 6437—Cattle, Barn Spray

The McLaughlin Gormley King Co., Minneapolis, has announced that its new "MGK Repellent 11" has been accepted and registered by the Food and Drug Administration and the U.S. Department of Agriculture for pesticide use on dairy cattle and in dairy barns. This new repellent, a butadiene derivative, is the first and only pesticide registered for such use since the passage of the Pesticide Residue Amendment, according to the firm. Cattle, barn and dairy sprays including "MGK Repellent 11" repel flies, mosquitoes and roaches. They have a residual efficiency of at least 72 hours

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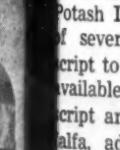
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No. 5483—Mixer
Bulletin

An 8-page bulletin illustrating its horizontal mixer which features "triple action mixing" has been published by the Strong-Scott Manufacturing Co. The mixer is claimed to be ideal for mixing wet or dry materials and blending those of pulverized or granular sizes. Among the industries which have application for the mixer are the feed and fertilizer trades. The bulletin, No. TSB6-38, is available without charge by checking No. 5483 on the coupon and dropping it in the mail.

A new method of treating soil for pH and soil structure is described in a folder entitled "Agricultural Ferric Sulfate" published by Stauffer Chemical Co. The folder contains complete how-to-use instructions. It claims that ferric sulfate—which has been used as an industrial chemical for many years but only recently has been found to be a valuable agricultural aid—has three basic functions: Because it is essentially acidic, it corrects soil alkalinity; it supplies iron for soil enrichment; and, the ferric hydroxide and ferric oxides which it forms in the soil, coat individual soil particles so that they do not clod or pack. The folder is obtainable, without charge, by checking No. 6440 on the coupon and mailing it to Croplife.



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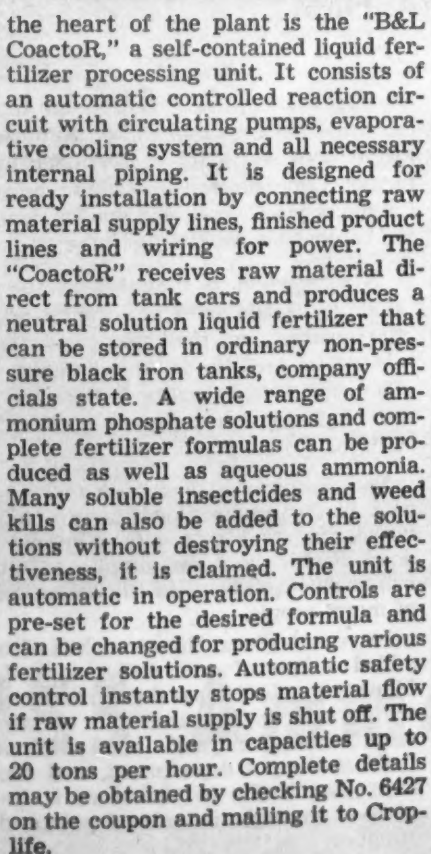
A slide set on alfalfa production has been assembled by the American Potash Institute, Inc., with the help of several cooperators. A detailed script to accompany the slides is also available. Covered in the slides and script are such topics as uses of alfalfa, advantages, nutrient requirements and 10 steps to successful alfalfa production. The 10 steps involve a soil test, liming as needed, use of corrective fertilizers, preparation of a weed-free seed bed, use of certified, inoculated seed, use of starter fertilizer followed by regular fertilizer applications annually, tissue tests to detect nutrient deficiencies, insect control and proper cutting and grazing. The slide set and script are obtainable on a rental basis or can be purchased in any quantity desired. To secure more complete details check No. 6431 on the coupon and mail it to this publication.

"How to Use Nitrogen Solutions" is the title of a new film recently released by Nitrogen Division of Allied Chemical & Dye Corporation. It deals with the use of nitrogen solutions for direct application and covers many phases of this method. Using a step-by-step approach, it tells how nitrogen solutions are handled, stored and applied. Many different types of applicators are shown in use on farms of the Midwest and South. The film is aimed directly at the farmer and is designed to answer his most common questions about nitrogen solutions. Original ballad music lends an entertainment flavor. The new movie runs 14 minutes and is 16 mm, sound and color. Clubs, schools, companies and farm organizations may borrow a print at no charge. To secure more complete details check No. 6432 on the coupon and mail it to Croplife.

New literature has been prepared by the Chemical Engineering Service division of Manitowoc Shipbuilding, Inc., describing its granulators, hopper systems and other fertilizer plant equipment. A folder describes the firm's small pelletizing unit. Characteristics claimed for this unit are: It may be shut down, fully loaded, and restarted at any time; no dust build up; no sulphuric acid required on low nitrogen grades and moisture content 2.5% or less. Outlined in a booklet is a description of hoppers and mixing systems manufactured by the company. The systems are available in automatic, semi-automatic or manual designs. The 26-page booklet includes cost comparison charts, allowing the operator to compare his present costs with those under the firm's hopper system. Secure the literature by checking No. 6432 on the coupon and mailing it to Croplife.

The Agricultural Ammonia Institute has published a folder entitled, "Producing Quality Corn More Efficiently with Agricultural Ammonia." Recommended practices, such as when, how and the quantity to be applied on corn are outlined. Testimonial statements from farmers and soils authorities are printed in the folder, as are five specific advantages for using anhydrous ammonia. Secure the folder by checking No. 6436 on the coupon and mailing it to Croplife.

A new, continuous flow, neutral solution liquid fertilizer plant has been introduced by chemical plants division of Barnard & Leas Manufacturing Company, Inc. Claimed to be



"The Question Box" is one of the most popular features of TFD, Spencer Chemical Company's magazine for fertilizer dealers. Questions submitted by dealers are answered by Proctor Gull, head of Spencer's 7-man field agronomy team. Here are a few timely questions and answers from recent issues of TFD.

1. QUESTION: Cost and efficiency-wise, how would you rank anhydrous, nitrogen solutions and ammonium nitrate?—A. D. Grainger, Market Bureau, Manning, S.C.

ANSWER: Spencer makes all three of these nitrogen carriers. We believe that ammonium nitrate, considering everything, is the best nitrogen buy for most farmers.

Ammonium nitrate is a versatile material. It can be stored in any good, sound waterproof building on the farm. The dealer can warehouse it the same way. It is dried to almost complete dryness and (in the case of "Mr. N" at least) is packed in a polyethylene-lined, moisture-proof bag. For this reason, it will remain in drillable condition indefinitely.

This means that the farmer can apply ammonium nitrate when his soil and his crop are ready and the labor supply available to do the job. The timing of an operation such as the application of nitrogen may be a critical thing to the farmer. It can well spell the difference between optimum acre returns and a less profitable operation.

Another point in favor of ammonium nitrate is that it is a solid and is guaranteed to be 33½ percent nitrogen. Because of this, the farmer knows how much he is applying because he can see it, feel it and even weigh it. He can also tell whether or not he is getting even distribution.

Because anhydrous ammonia is a gas, it must be sealed in the ground 6 to 8 inches deep, and the soil moisture must be just right. Otherwise, considerable loss of nitrogen may be experienced. This loss can range all the way from a negligible amount up

No. 20 in a series from the Spencer Chemical Magazine, "Today's Fertilizer Dealer"

Edited by



Chief Agronomist, Spencer Chemical Co.

to as much as 50 to 60 percent, depending on texture of the soil, depth of application, moisture content of the soil and rate of application of ammonia.

It was estimated in a recent publication that as much as 65% of anhydrous is lost from the soil in a Florida sand where 90 pounds of nitrogen is applied with the applicators spaced 40 inches apart.

Nitrogen solutions must be sprayed on and metered out through nozzles or other means of metering. These solutions have a tendency to salt out when temperatures get low, and this interferes with the uniformity of nitrogen distribution.

Most nitrogen solutions are corrosive, and therefore they must have specialized equipment for storage and handling. Usually this equipment is expensive. Anhydrous ammonia also requires specialized equipment—high-pressure equipment which is somewhat hazardous.

Thus, solutions and anhydrous are usually custom applied, and this means that the farmer loses control of his operation. He must wait his turn for the custom applicator.

It is for these reasons that we recommend ammonium nitrate as a source of supplemental nitrogen.

2. QUESTION: What percent of nitrogen is lost when broadcast on top of the ground in June and July? Is the loss greater than if plowed in?—P. W. Roberts, Valley Head, Ala.

ANSWER: Nitrogen is not lost when broadcast on the ground from any of the solid carriers that we know. All of these carriers are stable salts and are readily dissolved by any moisture that is available.

Most nitrogen carriers are hygroscopic and will take up enough moisture from the atmosphere to dissolve themselves. Thus they seem to disappear. However, the nitrogen content is still there.

Therefore, the only way in which nitrogen can be lost when applied on the surface of the ground is by run-off water from excessive rain or, of course, on extremely sandy soils where water moves so freely through the soil that it can be lost in the ground water.



To Fertilizer Dealers ONLY

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Doing Business With

Oscar & Pat



By AL. P. NELSON
Croplife Special Writer

About ten o'clock one morning, a short, chunky and jovial salesman named Bill Brooks came into the farm supplies store of Schoenfeld & McGillicuddy. He wore horn rimmed glasses, and his chubby, round face was tanned from chin to the back of his bald crown. A smile played around his lips and his blue eyes twinkled. Competitors always said that they wished they had the proverbial friendly spirit that Bill possessed, because it brought him so much business.

"Hello, Oscar," greeted Bill, flashing his famous smile. "How is every little thing today?"

Oscar looked up from his desk, and the frown on his forehead deepened. He did not like salesmen of any kind. They always wanted to sell something, usually more than a dealer wanted, Oscar figured. Oh, they could take Pat in, all right, but not him. He was wise to these salesmen. He was wise to anyone, for that matter, who tried to get him to spend money.

"Hello," he said coldly, and then discourteously went back to his figuring of discounts.

This attitude did not phase Bill Brooks. Ordinarily he tried to sell Pat McGillicuddy, for Pat was the buyer of the firm, but usually orders had to be okayed by Oscar, the large ones anyway, and for a long time, Bill Brooks had tried to get Oscar to "warm up" to him.

But despite Bill Brooks' many and persistent approaches, Oscar remained as aloof as a Russian at the United Nations.

Brooks now opened his black briefcase and brought out a big scrapbook, chuckling as he opened it. "Oscar," he said, "do you ever get up in the morning feeling blue?"

Oscar looked puzzled. "Feeling blue?" he said suspiciously. "What has that got to do with selling fertilizer?"

"Plenty," grinned Bill Brooks. "Unless a fellow gets rid of his blue feeling, customers will notice it and not be so friendly. I know many times when I get up mornings I'm a little blue—especially after the night before."

"Ach, there is no night before for me," Oscar said. "I go to bed at a certain time every night, so I know I get enough sleep."

"But a man can still get blue even if he gets plenty of sleep," the salesman said with a winning smile. "I know, I do. And, Oscar, I've got a sure remedy for getting over that blue feeling real quick."

Oscar sensed a sales presentation coming up. "We don't buy off trail stuff," he said. "Ach, we try to stick to selling fertilizer for cash." The word "cash" received much tonal emphasis.

"I am not trying to sell you any remedies," Bill Brooks returned with a smile. "But I want you to see this book. I've got a surprise for you concerning it."

Oscar looked up suspiciously. Not only did he distrust salesmen, but he resented the time they took from his work. Would the fellow never cease his bantering and go away?

"This is my personal joke book," Bill Brooks said confidently. "When I am blue in the morning, I just drag out this book and start reading the jokes. If I stick at it, Oscar, I soon

start laughing, and if I'm not careful, I'll laugh so much I can't even hold my hand steady while I shave. Oh, it's a wonderful way to shake the blues."

Procedure like this was utterly foreign to Oscar's nature. Jokes were not part of his life. But business was, especially cutting costs and saving money. He merely looked contemptuously at Bill Brooks.

"Listen to this one," said the salesman. "Some fellow says that what this country needs is a low priced lawn mower that can be operated from an air conditioned living room. Oh, isn't that rich?" And the salesman laughed uproariously, his eyes flaring with tears.

A snicker came from Tillie, the plumpish bookkeeper, encouraged Bill Brooks and he looked happily in her direction for a moment, but Oscar's face was as solemn as a clock's.

"And here is another one," went on Bill Brooks. "A door to door salesman stopped at a house one day and told the man who answered, 'I have something here that will make your life easier, make you popular and bring you a host of friends?' And what did the man answer? Why, he said, 'Good, I'll take two fifths.'" Again Bill Brooks went into a fit of laughter, but Oscar only bit his lips, and his face got pale.

Bill Brooks ran his hand through his hair. "And this one hits the farm supply business, Oscar. Somebody says that a man who sowed his wild oats prayed real hard for a big crop failure!" Once more a gale of laughter swept the room. Even Tillie laughed a little at that one.

Oscar's face was almost white with anger. "Why are you reading that—that stuff to me?" he asked sharply.

Bill Brooks' face fell. "Why, I thought you'd appreciate the jokes, Oscar. I—I made up this book specially for you. I want to make a present of it to you, so that any morning

when you wake up blue you can read it and get over the blues. Believe me, it works."

Oscar threw down a pad of paper which he had been holding. It thumped on the top of his neat desk. "I don't want a silly book like that!" he snorted. "If I had it I would throw it into the wastebasket. Ach, such a business. Why don't you spend your time reading up on fertilizers and insecticides instead of looking for jokes? Maybe you are a joke, too."

And with that he went back to figuring discounts, angry at the time the salesman had wasted.

Sadly, Bill Brooks went over to Tillie's desk. "I failed," he muttered. "I wanted to do something nice for him to warm him up. He's always so hostile. I guess the guy who said a salesman could never bat 100% is right. Tell Pat I'll phone him later in the day."

Carrying the joke book under his arm, the briefcase in the other, the disconsolate salesman went slowly out the door.

Louisiana Cotton Yield Sets Record in 1955

BATON ROUGE—Louisiana cotton growers made an average of 454 lb. of lint to the acre in 1955, says I. W. Carson, associate agronomist with the Louisiana State University Agricultural Extension Service. The 454 pound figure, although three pounds below preliminary estimates, is still about 50 lb. to the acre above the previous record.

High parishes in 1955 were Caddo with 602 lb. of lint to the acre, Morehouse, with 599 lb., and Madison, with 551 lb.

The extension agronomist points out that the state record was set in spite of severe insect and weather damage in some areas. Rising per acre yields in recent years, he adds, have been due to concentration of the cotton crop on better cotton land, improved soil preparation, heavier fertilization and greater use of insecticides.

ALABAMA FIRM

(Continued from page 9)

the seed, especially if it is something new.

In addition to selling seeds in bulk, the firm also sells package garden and flower seeds and vegetable plants. A sizable business is done on such plants many months of the year, due to the long growing season in the south.

Mr. Simms reports that in this area farmers use a great deal of 6-8-4, 6-8-8 and 4-10-7 on cotton. Farms raising cotton vary from a few acres up to 1,700 acres. Average cotton farms are around 300 acres, though, he says.

Many farmers are fertilizing pastures in this region. Fertilizers used for this purpose include 0-14-14, 0-16-8, 0-12-20, 0-20-20. On corn fertilizers such as 4-12-12 and 4-10-7 are in considerable demand.

The store sells a great deal of fertilizer, but not so much as several years ago, Mr. Simms reports. This is due to a great deal of discounting and other bad practices which crop up in the area, he said. The Simms firm does not believe in cutting prices below reasonable profit levels and so

does not make an active campaign for cut price business, states Mr. Simms. But it does sell a lot of fertilizer to farmers who have been buying here for many years, and also does a sizable volume on garden fertilizer.

A sign which is mounted in the store gives the sales philosophy of the owners and their son, and it refers to quality of merchandise. The copy says, "Quality is Remembered Long After Price is Forgotten."

The Simms firm has been in business in its present location for ten years, and it also does a lot of outdoor display of farm supplies. This brings such products to the attention of many people.

In recent years, the store has also added a line of pets and pet food. Monkeys, rabbits, parakeets and canaries are stocked and sold certain months of the year. Mrs. Simms handles the pet department, and she says that traffic in the store is increased through the sale of pets and supplies.

Bottled Gas Firm Ties in Sales of Anhydrous Ammonia

Because they serve hundreds of farmers with bottled gas for cooking heating and refrigeration purposes, Joe Thompson and Joe Graham, who operate Southern Butane & Propane Gas Co., Columbia, Tenn., find the sale of anhydrous ammonia to be in well with this type of business. The anhydrous ammonia is sold to practically the same customers who buy the bottled gas, as most of them have use for this type of fertilizer.

The two men have been in business for about six years and have sold anhydrous ammonia for the past three years. They have five applicators which are powered with propane gas, and the firm does all of its own applying at the present.

Floyd Watson, office manager, reports that many customers will buy from \$100 to \$150 worth of anhydrous ammonia, mostly for the spring season and for early summer side dressing. The size of the average farm in the region is about 80 acres, with corn, cotton and tobacco being the principal crops. On corn most of the farmers use 100 lb. of 82% nitrogen. During the past year the average charge to the farmer has been \$1 per acre for the anhydrous ammonia and the application.

In recent years, states Mr. Watson, there has been a tendency toward the use of some anhydrous ammonia in the fall. The firm sells this type of fertilizer within a radius of 30 miles.

The credit problem has been solved by the owners, by the fact that they already had credit ratings on most farmers through their bottled gas business. Thus, before selling anhydrous to farmers, they could make certain that such farmers had a good credit rating.

The firm has one salesman who contacts farmers in the area for bottled gas and anhydrous ammonia service. In this way, the salesman is able to spend some time right on the farm explaining anhydrous and its uses to the farmer. This type of selling has helped the company to boost its volume every year.

"Our firm has held some meetings with farmers explaining the uses of anhydrous ammonia," says Mr. Watson, "and these have worked out very well. However, the county agent does such an excellent job of stressing all types of fertilizer to farmers, that we do not need to put on too many educational meetings of our own. We use some newspaper advertising on anhydrous annually, and our salesman always tries to line up applications in advance of the season. This method works out pretty well for us."

IDAHO SHIPMENTS

POCATELLO, IDAHO—The Idaho cherry shipments have been limited to some 20 carloads this year because of frost damage, according to James M. Hansen, district agent at Pocatello for the Pacific Fruit Express. Fresh pea shipments from the western part of the state were recently completed and totaled about 125 carloads. New potato shipments are scheduled to start about July 15.

RETIRED PROFESSOR DIES

ITHACA, N.Y.—Alpheus M. Goodman, 71, emeritus professor of agricultural engineering at Cornell University, died recently. He was on the Cornell faculty for 33 years before his retirement in 1952. During his career he had served as a government consultant at various times in the Philippines, Puerto Rico, Alaska, and in the Caribbean area.

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Irrigated pastures need USS Ammonium Sulfate for profitable growth

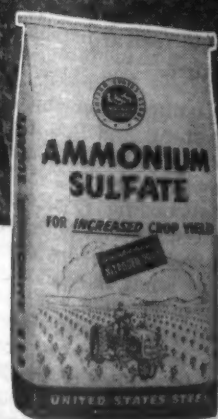
Irrigation alone just won't turn the trick. Pastures need more than water to produce profitable growth. Irrigated pastures *without* the help of nitrogen produce only about one-half the amount of feed of pastures treated with both water *and* nitrogen.

These figures give graphic proof of what nitrogen alone can do for non-irrigated pastures. The figures represent pounds of foliage per acre from the early, *moist* months through the summer drought period.

	May	June	July	Aug.- Sept.	Total Foliage
Orchard grass without N	1580	440	420	340	2,780 without N
Orchard grass with 100 lbs. N	1650	1570	1010	1240	5,470 WITH N 2,690 EXTRA POUNDS THANKS TO NITROGEN

If your customers want quick, even pasture recovery, urge them to apply between 200 and 300 pounds of USS Ammonium Sulfate per acre. There will be more blades of grass per acre—which means each acre can produce more milk and beef.

Do yourself and your customers a good turn by encouraging the use of dry, free-flowing, nitrogen-bearing USS Ammonium Sulfate for more profitable pastures. Order your supply, today!



USS Ammonium Sulfate



UNITED STATES STEEL

To make your selling job MORE PROFITABLE!

...outstanding performance for your customers.



Good product performance means satisfied customers who keep coming back to you for their needs. And Phillips 66 Ammonium Nitrate delivers outstanding performance. It is guaranteed to contain 33.5% nitrogen, and is prilled to flow freely, handle easily. New multi-wall polyethylene bags (80 and 100 lb.) help to preserve free-flowing quality.

HERE ARE YOUR EXTRA PHILLIPS 66 BENEFITS!

You'll benefit from the many extras you get from Phillips 66 service—in prompt deliveries and personal service from your Phillips 66 fertilizer field man.

You have the assurance of dealing in products backed by one of America's great names in chemical fertilizers when you sell Phillips 66 Ammonium Nitrate.

The Phillips team of agronomists, engineers and production men is constantly using its skills to maintain and improve the uniform high quality of Phillips fertilizers.

This high quality standard, plus prompt delivery and powerful advertising support will make your selling job more profitable this year—and in the years to come.

It's Performance That Counts!

**PHILLIPS
CHEMICAL COMPANY**

A Subsidiary of Phillips Petroleum Company
Bartlesville, Oklahoma

A COMPANION HIGH NITROGEN
FERTILIZER, NOW AVAILABLE
IN 80 AND 100 LB. BAGS



OFFICES IN:

AMARILLO, TEX.—First Nat'l Bank Bldg.
ATLANTA, GA.—1428 West Peachtree Street
BARTLESVILLE, OKLA.—Adams Bldg.
CHICAGO, ILL.—7 South Dearborn St.
DENVER, COLO.—1375 Kearney Ave.
DES MOINES, IOWA.—6th Floor, Hubbell Bldg.
HOUSTON, TEX.—1020 E. Holcombe Blvd.
INDIANAPOLIS, IND.—1112 N. Pennsylvania St.
KANSAS CITY, MO.—500 West 39th St.
MINNEAPOLIS, MINN.—212 Sixth St. South

NEW YORK, N. Y.—80 Broadway
OMAHA, NEB.—WOW Building
PASADENA, CALIF.—604 Citizens Bank Bldg.
RALEIGH, N. C.—804 St. Mary's Ave.
SALT LAKE CITY, UTAH.—68 South Main
SPOKANE, WASH.—521 E. Sprague Ave.
ST. LOUIS, MO.—4251 Lindell Blvd.
TAMPA, FLA.—1214 South Dale Mabry
TULSA, OKLA.—1708 Utica Square
WICHITA, KAN.—501 KFH Building

Arkansas Firm Uses Novel Sign to Let Customer Know His Business Is Wanted

Many a sale is lost, the experts say, because dealers and others who sell often fail to "ask for the business." Some salesmen are whizzes at explaining the product they are selling, and they have the customer all enthusiastic, but, some of those salesmen wait for the customer to say, "I'll buy it."

However, the customer wants the salesman to ask him to buy, and so many a sale is lost when the salesman does not carry through and close the sale properly.

George Hestand who operates a farm supplies store at Pine Bluff, Ark. makes no mistakes when it comes to asking the customer for his business. Mr. Hestand has a large neon sign out in front of his store which says, "George Hestand Wants Your Business."

The sign can be seen for several blocks in both directions, and it shows everyone that here is a storeowner who is happy to get the business. Consequently, more of them come in to buy, and here they find cheerful, willing, friendly clerks, which helps a great deal.

Walter Ross, who operates the feed, fertilizer, seeds and garden supplies department of this store, states that quite a number of customers, especially the new ones, mention the neon sign. It is novel, of course, and impresses folks. A sign just saying "George Hestand" would not create so much interest, for it would be just like many other signs which just give the owner's name.

Mr. Ross reports that he sells a lot of fertilizer, ranging in poundage all the way from 5 to 100 pounds. A great deal of it is sold to people who have gardens, although he does have some farm customers.

Right near the fertilizer displays, too, Mr. Ross has a fine bulk seed rack, which was constructed at the store. Here the customer can buy just about any type of garden seed which he wants. Customers come back year after year, Mr. Ross states, because they know that the store has a large stock of quality seeds.

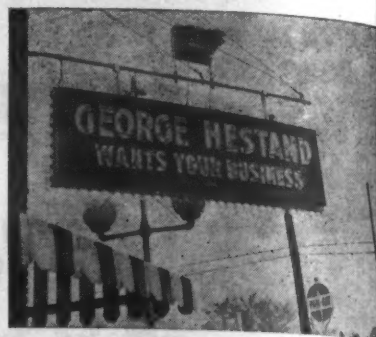
"We always try to sell seeds to the fertilizer customer, and vice versa," declares Mr. Ross, "and then when we are handing the package to the customer we don't forget usually to tell them that we have a large line of insecticides and sprayers when he needs them."

This store gets many of its customers back three to four times a year. Usually once for fertilizer and seeds, next for garden and lawn tools, again for insecticides and sprayers. In fall, customers come back for fertilizers, rakes, and lawn seed.

Mr. Hestand also has a hardware and grocery department in his store. The farm supplies division connects with the remainder of the store through a center archway. Customers move easily from one section of the store to another. The grocery business benefits the farm supplies section and vice versa.

The store also has a daily radio program of fifteen minutes over station KOTN, Pine Bluff. News, weather and music are broadcast on this program, and there is a sizable audience. Fertilizer, seeds and other garden supplies get frequent mention on commercials on the program. The program also stresses the fact that the store has ample parking space. This parking faces the farm supplies division. Customers can enter the grocery through the farm supply store, from the parking lot if they wish.

In addition to selling fertilizer and seeds, the farm supply store also sells feed and baby chicks, states Mr. Ross.



ASKS FOR BUSINESS—This neon sign, in front of the George Hestand farm supply store in Pine Bluff, Ark. is noted and commented upon by many customers.

OVER THE COUNTER

(Continued from page 9)

spent for advertising and the volume of business.

From a limited analysis in the previously mentioned survey it looks like each one-half cent or less spent for advertising brings in an additional dollar of business. If gross margin is 15% on each dollar of sales it would seem to be good business to do more advertising. In other words, it seems apparent that most dealers have fallen far short of the saturation point in their expenditures upon advertising and the old slogan, "It pays to advertise," is especially practical, expedient and appropriate to this business.

Summary

In summary, the diversification of the farm chemical dealer is both a disadvantage and an opportunity; a disadvantage because the dealer isn't able to concentrate the year around on fertilizer and other farm chemical sales. However, by becoming headquarters for farm supplies and a competent advisor on problems affecting the farmer, the dealer can enhance his prestige and business position greatly.

With an increasing awareness of the advantages of fall fertilization the seasonal aspect of the fertilizer business will become less important. Farmer education will play an important role if this trend is going to achieve wider acceptance.

The diverse backgrounds of farm store managers can be advantageous if utilized for selling quality lines of merchandise, coupled with a well-grounded fund of knowledge about the proper use of each and every product sold.

The dealer who does business in an unattractive and poorly designed building can hardly be held blameless under any conditions. A hundred dollars worth of paint can work wonders in any store, no matter how unattractive it is. Further, moving a few walls and inserting some larger light bulbs in the dark corners need not cost a great deal of money. Here is an area where many dealers can really take some forward strides for little expenditure.

As for competition, this is inherent in our system, and few are the businessmen who are not faced with it. Often however, dealers set prices and operate according to what his competitor does, instead of taking a careful, objective look at his own business and charge what they should to make an adequate profit.

Competition is good, but competition, like credit, should not dictate the operating policy of the dealer. Instead, the dealer should outline for himself, his own sound merchandising and credit policies and then adhere to them religiously.



FARM SERVICE DATA

Extension Station Reports

Low cost feed is vital in helping farmers make the best possible profits from livestock and livestock products, according to two University of Kentucky agronomists, George D. Corder and Harold F. Miller.

"This does not mean a poor quality feed, but one produced at the least cost possible, whether it be grain and forage," says the agronomists' statement.

The agronomists point out that pasture crops produce the cheapest feed for livestock. Hence, special attention should be given to pastures this year.

"In establishing pasture and hay fields, the first step should be to have the soil tested," Mr. Corder and Mr. Miller suggest.

"Next step should be to apply lime and fertilizer needed to establish the crop and give high yields. The third step is to maintain pasture and hay production by annual applications of phosphate and potash fertilizer as indicated by the soil test.

"It is cheaper to maintain established forage crops through top-dressings of fertilizer than it is to reseed them."

If there is no legume in the mixture, or if the stand is weak, the use of nitrogen fertilizer can be profitable, provided there is sufficient phosphate and potash to meet the needs of the crop, they point out.

★

Farmers in the rice-growing areas of Arkansas may find it profitable to fertilize for their soybean crop, provided their soils are low in phosphorus and potash.

Results pointing to this conclusion were obtained in research studies carried on by the University of Arkansas' Agricultural Experiment Station. The tests were conducted on cooperating farms located in eight eastern Arkansas counties, and included varieties commonly grown in the area.

Soils that tested medium to high in phosphorus and potash and had a favorable lime content did not respond profitably to fertilizer application for soybeans. Much of the Mississippi Delta soils of eastern Arkansas fall into this category.

Sandier soils and silt or clay loams of the Rice Prairie regions gave good response to phosphorus and potash in applications of 200 to 400 lb. of 10-20, 0-20-20, or 0-20-10, depending on the phosphorus and potash soil test levels. Applications of phosphorus and potash were profitable as long as the preceding crop was not fertilized heavily.

Banding fertilizer a few inches to the side or below the seed row proved more effective than broadcasting before seeding, but good response was obtained from either method on deficient soils. In some cases, sidedressings of phosphorus and potash gave profitable yield increases where beans showed visual symptoms of nutrient deficiency during the first 30 to 50 days of growth. Sidedressings were effective only when followed by adequate rainfall or irrigation. Nitrogen sidedressings, as either anhydrous ammonia, nitrate of soda or ammonium nitrate, failed to increase bean yields although vegetative growth of leaves and stalks was better where nitrogen was applied, the station reported.

These tests on the Delta and Rice Prairie soils were carried out from the Eastern Arkansas branch of the Agricultural Experiment Station's Soil Testing and Research Laboratory. Dr. R. L. Beacher of the Experiment Station staff was project leader.

★

L. C. Hill, assistant agronomist with the Louisiana State Agricultural Extension Service, points out that in tests at the LSU Rice Experiment

Station near Crowley in 1955, rice fertilized with the right amount and kind of commercial fertilizer outyielded unfertilized fields by nine barrels per acre. The fertilized plots made 25.7 barrels to the acre and the unfertilized 16.7 barrels. The difference, at 1955 prices, amounted to \$45 per acre in favor of the fertilized plots.

★

Control of the tobacco wireworm is easy with a new method announced by the Pee Dee, S.C. experiment station.

A small amount of insecticide added to the water normally used in transplanting will control this pest, the entomologists have found. They suggest adding to 50 gallons of transplanting water 8 ounces of 40 to 50% chlordane wettable powder, or one-fourth ounce of 25% lindane wettable,

or two fluid ounces of a liquid concentrate containing 5% lindane.

★

The fertilizer 6-8-4, which landowners have been accustomed to using for fishponds, will soon be unavailable in Alabama. But state specialists have released new fertilizer recommendations listing materials and rates which, they say, work even better than 6-8-4. According to Earl F. Kennamer, Alabama Polytechnic Institute, Extension Fish Specialist, 100 lb. of 8-8-2 per acre, or some plant food combination that approaches this grade, is the suggested application for fertilizing farm ponds.

CONSERVATION WORKSHOP

COLLEGE STATION, TEXAS—A soil and water conservation workshop has been scheduled at Texas A&M College here July 17-18.

THIS YEAR

For Complete Cotton Insect Control Include the "Old Stand-bys"

PENCO PENCAL (LOW-LIME CALCIUM ARSENATE)

AND

PENCO Calcium Arsenate

Made in the South ... for the South

PENCO PENCAL (low-lime Calcium Arsenate)

- Compatible with BHC-DDT-PARATHION-MALATHION
- Time proven
- At regular Calcium Arsenate price

PENCO Calcium Arsenate

- Reliable
- Now in new favor
- An old-time favorite

For bulletins write or 'phone Pennsalt plants, Bryan, Texas or Montgomery, Alabama

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TACOMA, WASHINGTON

Aurora, Ill. Bryan, Tex.

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Los Angeles, Calif. Philadelphia, Pa.

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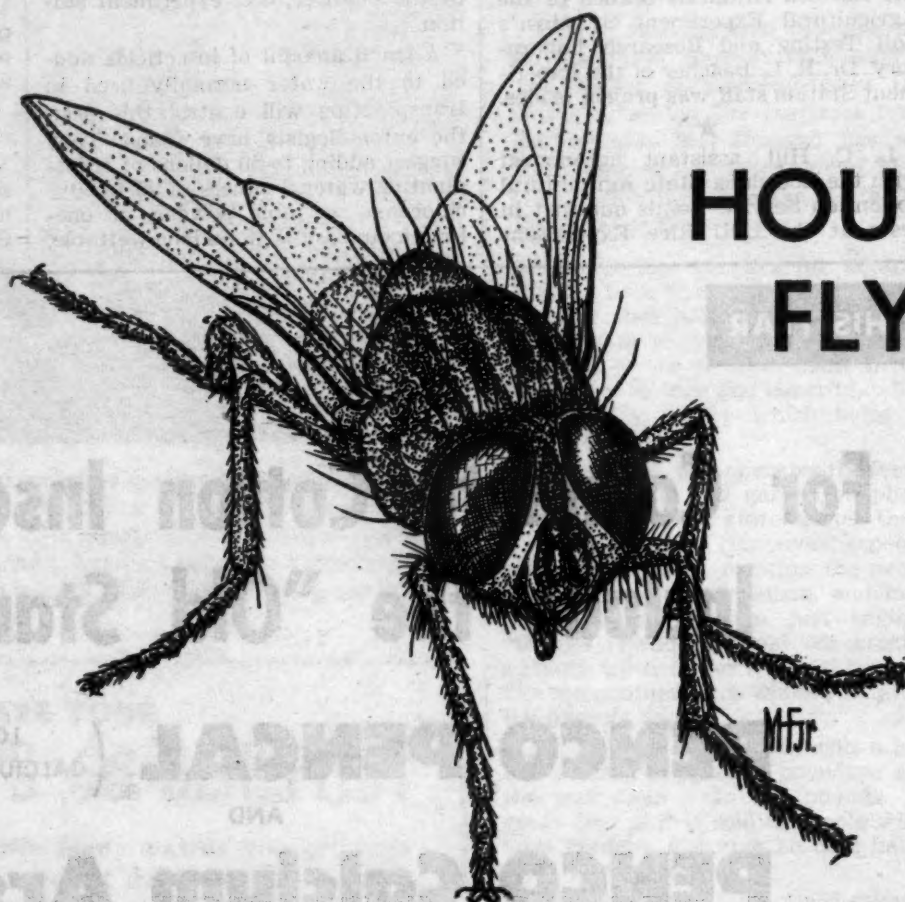
Pennsalt Chemicals

Other PENCO Cotton Insecticides include formulations of:

- BHC-DDT
- ALDRIN
- ENDRIN
- TOXAPHENE
- DIELDRIN
- PARATHION

BUG OF THE WEEK

Mr. Dealer—Cut out this page for your bulletin board



HOUSE-FLY

How to Identify

Any insect as common as the housefly certainly needs neither introduction nor detailed description to be recognized. Still, thanks to modern insecticides and greater steps toward sanitation both on the farm and in homes, the fly is not as common as it once was.

Life Habits of the Housefly

Like all types of flies, the housefly goes through four stages in its life cycle: the egg, larva (maggot), pupa, and adult. This cycle is completed in from 12 to 30 days, with the temperature being the most important factor governing the time involved. Under favorable conditions, there may be as many as 12 generations a year. A new generation begins with the laying of eggs by the female flies. A female may lay as many as 2,700 eggs in 30 days. The eggs, usually laid in garbage or manure, hatch into larvae in 10 to 24 hours. The larvae feed on the material in which they hatch. They stay beneath the surface. When they reach full growth, 4 to 10 days after hatching, they are creamy white and about $\frac{1}{2}$ inch long. Near the end of the larval period the larvae crawl to the surface of the breeding material. If the surface is sufficiently dry, the larvae transform to pupae there. If the surface is too moist, the larvae crawl to a more suitable place and transform to pupae. The pupal stage lasts 3 to 6 days in warm weather; it may last a month or more in cold weather. The pupal case is barrel shaped and

about $\frac{3}{8}$ inch long. At first it is yellowish; later, dark brown. Within the case the pupa transforms to a fly.

Harm Done by Housefly

When considered as a household pest, flies are dangerous to human health because they carry and spread disease germs that may be in the materials they breed in, feed on and walk on. Houseflies are also "barnflies," since they inhabit such places and endanger the health of livestock and greatly reduce milk production when permitted to annoy cows. The despicable habits of flies in feeding and breeding in manure, garbage and fermenting crop wastes, then walking on food for humans, is one of their greatest threats to health.

Control of the Fly

Methods of all kinds, from hand "swatters" to live electric wires have been utilized in a thus-far vain attempt to exterminate this pest. Modern pesticides suitable for use in dairy barns without the hazard of contamination of cows or milk, are available in spray form. Toxicants have been placed on screen wire to poison the fly; sticky paper has been used to trap them; paper strips placed on screen doors to frighten them away when the door is opened; and many types of baits and traps have been designed to halt them. Most promising methods appear to be the elimination of breeding spots for the flies, and the greater use of insecticides.

Drawing of Housefly furnished Croplife through courtesy of the artist, Marvin Frost, Jr.

Previous "Bug of the Week" features have been reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.

BENZENE SUPPLY

(Continued from page 1)

the steel strike on the pesticidal chemical supply is the report of SDA this week citing a "heavy emergence of boll weevil in the early stages of the cotton belt." USDA goes further to say in its official cotton production report for July 1, 1956, that boll weevil infestation was increasing rapidly in untreated fields late June and is a serious threat unless controlled.

The importance of the protection of the cotton area this year is of major significance since the overall acreage of cotton is down three per cent from last year—now estimated by USDA at approximately 16.9 million acres.

This means in bold, bald terms that the cotton farmer to gain full returns from his cropland, must get the maximum output from reduced acreage. The boll weevil is a cost factor on every cotton farm. It contributes nothing, but robs the cotton farmer of higher yields and increases his per unit cost, thus excluding him from a fair profit margin.

This steel strike ordinarily would be unsuspected of this impact on the cotton economy of the nation. Information of a threat of shortage of benzene should alert dealers in agricultural supplies everywhere. They should know that no matter how seemingly remote such events appear, our national economy is so closely geared that a stone dropping in a far-away economic pond will ultimately be felt in ripples of varying degrees on distant shores.

This news should be a clear warning to dealers in pesticidal chemicals not only in the cotton but corn belt as well, to take a look over their order books and make certain that they are not going to be caught short, thereby doing a dis-service to their established farm customers. Furthermore there is the secondary danger of delay in deliveries in tight supply squeeze.

However, these observations must be qualified by the outlook of the local dealer and his views of demands for cotton and corn pesticide controls affected by the weather. Intermittent rain and hot weather in the cotton belt will stimulate weevil development. On the other hand, hot dry weather would discourage weevil development and dampen demand for pesticides.

On balance it may seem that the prudent businessman in the farm supply business may wish to err on the side of caution and obtain an adequate supply of pesticides, or get assurance of delivery from his material suppliers now. The deep responsibility of the dealer to take such risks for his consuming farmer groups may pay off generous dividends later if he will reveal his willingness to protect his cotton and corn farmer customers in this threatened squeeze on the benzene supply.

Chemical and Mining Conference Scheduled

SAN FRANCISCO—Recognizing a growing bond between all branches of the chemical industry and the mining industry of northern California, the San Francisco Chamber of Commerce is sponsoring an all-day conference between representatives of the two industries to be held at the Fairmont Hotel in San Francisco on Nov. 9 from 9 in the morning until in the afternoon.

Topics to be discussed in the unique get together are the requirements of agricultural and other chemicals made upon the western mineral processing industry, the mineral requirements made upon the chemical processing industry, mineral production of chemicals in the western states, and possible future developments in western mineral production.

Truck Farmers In Mid-South States Enjoying Good Year

MEMPHIS—Truck farmers in the Mid-South are enjoying a good year.

Arkansas extension agents said early peaches and apples are moving to market in volume with one of the best crops of the year in prospect.

Good tomato crops are reported in South Arkansas and sweet corn is doing well in Crawford and Franklin counties. Cucumbers are beginning to move to markets and processing points, and the okra harvest has started in Chicot and White counties.

Crop prospects generally throughout Mississippi continued good during the past week.

Cotton insects continued in heavy infestations, with farmers poisoning for control.

Pastures continued in good condi-

tion as scattered showers supplied needed moisture in some areas. Other areas show need for rain.

Web worms and walnut caterpillars are causing severe damage to pecan crop prospects in the southern part of Mississippi, according to Chesley Hines, extension horticulturist. In some parts of the coastal area, trees are being completely stripped by these pests.

Southeast Missouri crop reports continue to be optimistic. Cotton is fine and production costs have been reduced by cross-plowing. W. F. James, Pemiscot County agent, said.

Insects are of little problem to farmers in the Missouri Bootheel this year, he said.

Preston Dickerson of Bucoda, extension service entomologist, is making a survey of 2,000 acres in Pemiscot County. Mr. Dickerson, who is one of Missouri's seven entomologists making such surveys, reported finding only 45 boll weevils on 2,000 acres.

\$5 Million Lime Plant to be Built In Pacific Northwest

PORTLAND, ORE.—Construction of a \$5 million lime plant in the Vancouver, Wash., area will be the result of negotiations completed recently between the Aluminum Company of America and the Edna Bay Pure Stone Co., a Texas corporation. The two organizations announced that negotiations for a long term lease have been firmed up for Alcoa's Edna Bay, Alaska limestone claims.

The deposits from these Alaska claims will constitute the principal raw material source for the new plant to be built at Vancouver. Construction of the plant will begin early in 1957. It is engineered for a daily capacity of 300 tons. Located on the Columbia river, the plant will have a dock area for self-unloading Victory ships which will bring the material in from Alaska.



PHOTO COURTESY WESTERN GROWERS ASSN.

*Best of the crop
Since 1917*

TRONA® POTASH for Agriculture

In 1917 state fairs were awarding prizes for outstanding farm products just as they are today. Then as now, growers depended on Trona® MURIATE OF POTASH for high quality crops. For it was in 1917 that Trona, first to produce domestic Potash when World War I pinched-off foreign sources, shipped the first trainload to the east coast. For the next twenty years Trona was the only domestic source of Potash and today, in spite of AMERICAN POTASH AND CHEMICAL CORPORATION'S broad diversification program, is still one of the primary basic suppliers of high grade Muriate and Sulphate of Potash for Agriculture.

MURIATE of POTASH, agricultural grades 95-98% KCL, (60% K₂O minimum), regular and granular.
SULPHATE of POTASH, agricultural grade, 95-98% K₂SO₄ (51% K₂O minimum).



TRONA

American Potash & Chemical Corporation

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99 Park Avenue, New York 16, New York
214 Walton Building, Atlanta 3, Georgia

Plants • Trona and Los Angeles, California; Henderson, Nevada
San Antonio, Texas (American Lithium Chemicals, Inc.)

Export Division • 99 Park Avenue, New York 16, New York

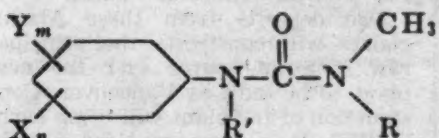
PRODUCERS OF—

BORAX	BROMINE
POTASH	CHLORATES
SODA ASH	PERCHLORATES
SALT CAKE	MANGANESE
LITHIUM	DIOXIDE

—and a diversified line of specialized agricultural and refrigerant chemicals

Industry Patents and Trademarks

2,753,251. Herbicidal Halophenyl-Alkyl-Ureas. Patent issued July 3, 1956 to Henry J. Gerjovich, Wilmington, Del., assignor to E. I. du Pont de Nemours & Co., Wilmington. A method for the control of unwanted plants which comprises applying to a locus to be protected, an amount sufficient to exert a herbicidal action, a halophenyl trialkyl urea represented by the formula



where X is halogen, n is a positive integer up to three, Y is selected from the group consisting of hydrogen and alkyl of 1 to 4 carbon atoms, m is a positive integer up to two, and R

and R' are alkyl groups of 1 to 8 carbon atoms with the proviso that the R and R' groups taken together contain at least four carbon atoms.

2,753,252. Fertilizer Manufacture. Patent issued July 3, 1956, to Marion D. Barnes, El Dorado, Ark., assignor to Monsanto Chemical Co., St. Louis, Mo. Process of producing phosphatic materials, which can be dissolved in neutral ammonium citrate solution, and ammonium nitrate which comprises reacting nitric acid with calcium-phosphorus containing material, removing substantially all of the free water and water of hydration from the resulting solution, mixing the resulting residue with anhydrous ammonia and thereby obtaining a mixture comprising calcium nitrate dissolved in the anhydrous ammonia and undissolved phosphatic materials, separating out the phosphatic mate-

rials, reacting the anhydrous ammonia solution of calcium nitrate with ammonium carbonate in aqueous solution and thereby obtaining a precipitate of calcium carbonate and a solution of ammonium nitrate, and separating out the calcium carbonate.

2,753,253—Treatment of Phosphate Rock. Patent issued July 3, 1956, to Clinton A. Hollingsworth, Lakeland, Fla., assignor to Smith-Douglass Co., Inc., Norfolk, Va. The method of increasing the fluorine content of a fluorine-containing phosphatic material and recovering fluorine therefrom in a subsequent defluorinating calcination which comprises subjecting a partially-defluorinated fluorine-containing phosphatic material to defluorination by calcination with concomitant formation of an exhaust gas containing a gaseous fluorine compound volatilized in the course of calcination, passing the exhaust gas into contact with the fluorine-containing phosphatic material whose fluorine content is to be increased and which

contains a constituent capable of reacting with the gaseous fluorine compound in said exhaust gas to form a solid fluorine compound which is retained with said phosphatic material whose fluorine content is to be increased, continuing the contact said exhaust gas with said last-mentioned phosphatic material until fluorine content thereof is substantially increased, subsequently subjecting the resulting phosphatic material of increased fluorine content to defluorinating calcination with concomitant formation of an exhaust gas containing a fluorine compound, recovering said last-mentioned fluorine compound from the exhaust of said last mentioned defluorinating calcination.

Industry Trade Marks

The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.5.) As provided by Section 31 of the Act a fee of \$25 must accompany each notice of opposition.

The trade mark noted here was published in the official Gazette dated July 3, 1956. **Clerit**, in capital letters, for insecticides, fungicides and preparations for killing weeds. Filed Nov. 18, 1955, Bayer Agriculture, Ltd., London, England.

Entomologists Discuss Topics of Interest To Fruit Growers

BERKELEY, CAL.—Two scientific achievements potentially important to California fruit growers were discussed at the recent annual Pacific branch meeting of the Entomological Society of America.

A University of California entomologist reported evidence that herbaceous plants act as a reservoir for a virus disease attacking fruit trees.

A U.S. Department of Agriculture entomologist told how a 17-year search for the insect carrying pear mosaic virus ended successfully.

The University of California's Dilworth D. Jensen, associate professor of entomology and parasitology, said he has found both herbaceous plants and stone fruit trees can be infected with four strains of a virus complex known as Western X disease.

He proved that the disease was the same in the plants and the trees using a leaf hopper as the transmitting agent or vector.

The second speaker, Norton S. Wilson, in the entomology research branch of the USDA in Riverside, said an eriophyid mite has been found to be the vector of the pear mosaic virus.

North Carolina Sets Policy on 4-10-6 Grade

RALEIGH, N.C.—The North Carolina Department of Agriculture announced a policy regarding 4-10-6 fertilizer, which was taken off the official grade list for 1956-57. The policy, as announced by John Reitzel, assistant commissioner of agriculture, is that manufacturers will be allowed to sell, after July 1, any fertilizer they might have in their warehouse of their distributors; however, any fertilizer which is in manufacturers' warehouses will have to be reformulated before selling.

BUSHEL AHEAD CLUB

LEXINGTON, KY.—Twenty-five Union County, Kentucky farmers are cooperating with the "Bushels Ahead Club" of Morgantown, in a long-range project that may enable their neighbors to increase corn production considerably in future years—without excessive cost. J. A. Wheeler, county agent, explains that the Bushels Ahead Club is a group of 10 individuals representing a cross-section of the economic interests of the county. The 24 farmers are running test plots on fertilization methods and high rates of application.

SALESMEN...

to help boost YOUR profits!

**LION Advertisements
Sell LION Nitrogen, and
Your Mixed Goods, Too!**

Continuous Lion advertising appears in leading farm publications, month-after-month, to pre-sell the Lion brand to farmers—and to sell the value of your mixed fertilizers as well!

Current advertisements are appearing in Farm and Ranch-Southern Agriculturist, Progressive Farmer, The Farmer, Nebraska Farmer, Kansas Farmer, Prairie Farmer, Wallace's Farmer & Iowa Homestead, Wisconsin Agriculturist and Farmer, Missouri Ruralist and Missouri Farmer. All of these advertisements are in color.

Each Lion advertisement promotes the economic benefits of properly using fertilizers, including Lion Ammonium Nitrate, to help increase the farmer's profits. Each advertisement sells hard on the importance of soil tests in the intelligent use of all commercial fertilizers. Lion, a leader in nitrogen production, leads the way to good fertilization practices... to better profits for you!

LION'S QUALITY LINE OF NITROGEN FERTILIZER MATERIALS

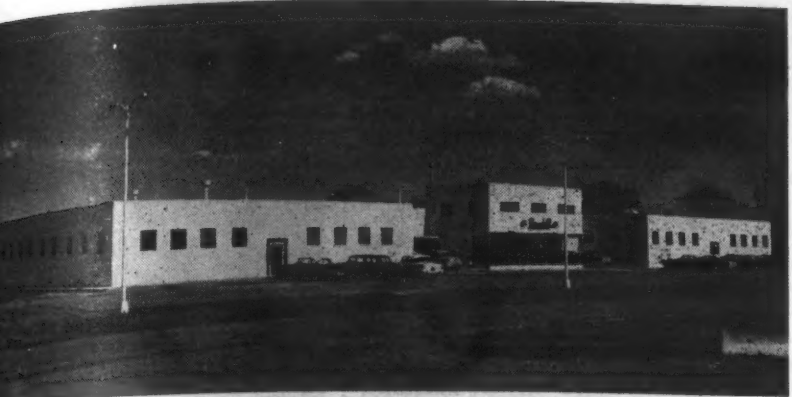
- LION ANHYDROUS AMMONIA—82.2% nitrogen. Quality guaranteed.
- LION AQUA AMMONIA—Ammonia content above 30%—other grades to suit your requirements.
- LION AMMONIUM NITRATE FERTILIZER—Improved spherical pellets. Guaranteed 33.5% nitrogen.
- LION NITROGEN FERTILIZER SOLUTIONS—Various types to suit your particular manufacturing needs.
- LION SULPHATE OF AMMONIA—White, uniform, free-flowing crystals. Guaranteed 21% nitrogen.

LION OIL
A DIVISION OF MONSANTO
CHEMICAL COMPANY



COMPANY
EL DORADO, ARKANSAS

DISTRICT SALES OFFICES: Lion Oil Building, El Dorado, Ark. • Insurance Exchange Building, Des Moines, Ia.
National Bank of Commerce Building, New Orleans, La. • 1401 Building, Atlanta, Ga.



BROYHILL EXPANDS FACILITIES—Manufacturing facilities of the Broyhill Co., Dakota City, Neb. have been doubled in size, the company has announced. Shown above are the buildings which house much of the firm's manufacturing and warehousing facilities at the Nebraska location. Products the company include over 100 models of agricultural sprayers and applicators for various types of fertilizers.

Broyhill Completes Factory Expansion Double Capacity

DAKOTA CITY, NEB.—The Broyhill Co., makers of farm spraying equipment, liquid fertilizer applicators, wagon hoists and tank heaters, just completed a factory expansion program which will double the company's productive capacity. Roy F. Broyhill, president, states that this expansion climaxes the company's 10-year record of growth.

The organization now owns or utilizes some 78,000 square feet of building space in Dakota City and in near-by Sioux City, Iowa, for its manufacturing, assembly and warehouse operations. Its sales and distribution activities extend throughout the United States and into a number of foreign countries.

In addition to its expansion in physical space, the Broyhill Co. has enlarged its scope of equipment during the first half of 1956, through the addition of three new types of equipment, plus the added capacity of rubber lining for its steel tanks destined to hold various types of chemicals.

Mechanical advancements include a pilot model of a new high-clearance machine, self-propelled, for spraying, fertilizing, defoliating and



Lee S. Ralph

APPOINTED—Lee S. Ralph has been named sales manager of the Chase Co., St. Louis branch, it has been announced by W. N. Brock, vice president and general sales manager. Mr. Ralph moves from the New York sales office of Chase Bag, where he has been located since 1953. He will coordinate the sale of textile bags and complete line of other packaging products by Chase in the St. Louis area. This includes portions of Missouri, Iowa, Illinois, Indiana, Kentucky, Tennessee and Arkansas. A graduate of the University of Ohio, Ralph served in the Signal Corps during World War II.

detasseling. It is scheduled for extensive research in cotton, soybean and corn-growing areas before production models are offered.

Certain models of the company's tanks and spraying booms are being adapted for use with midget tractors, and a new line of farm fuel tanks has been introduced by the company.

Ten years ago, the company's entire production consisted of spraying booms, whereas Broyhill now manufactures over 100 models of agricultural and fertilizer applicator models of sprayers. The units are adaptable for tractor, trailer or truck mounting. Liquid fertilizer equipment for surface or sub-soil application of non-pressure or low pressure, volatile or non-volatile liquids, is produced for tractor, trailer and truck mounted units.

From the company's tank facilities in Sioux City, Iowa, comes steel, stainless steel, and aluminum tanks, ranging in size from 60 gallons to 22,000 gallons. Facilities for lining the tanks with rubber by the Gates Rubber Co. are available next door.

Cotton Mechanization Conference Scheduled In Atlanta Aug. 22-24

MEMPHIS—Ways of realizing the full potential of mechanization for reducing production costs, improving growers' incomes and putting cotton in a better position to meet price competition will receive special emphasis at the tenth annual Beltwide Cotton Mechanization Conference. The conference will be held Aug. 22-24 in Atlanta at the Biltmore.

A searching look into the questions of how big a future cotton may have—and how strongly the answer depends on progress in farm technology—will keynote discussions. The role of conservation farming in efficient production, a subject of particular importance in the Southeast, will be singled out for close attention.

R. Flake Shaw, executive vice president of the North Carolina Farm Bureau, will open the conference the morning of Aug. 22. Delegates will be welcomed by Dr. C. C. Murray of the University of Georgia, host institution for the meeting.

After a half-day speaking session Aug. 23, delegates will travel by bus to the Georgia Agricultural Experiment Station near Griffin for a demonstration of research work on mechanization of pre-harvest cotton production practices. J. G. Futral, head of the university's department of agricultural engineering, will direct the demonstration.

The conference will end Aug. 23, but research and design engineers from the farm equipment industry, U.S. Department of Agriculture and land-grant colleges will stay over the following day for a technical workshop.

The mechanization conference is sponsored by the National Cotton Council, in cooperation with the University of Georgia, farm equipment industry, USDA, farm organizations and other groups.

Gloomicides

A young high school graduate, seeking his first job in a large manufacturing establishment, was presented with a formidable 8-page application form and told to fill it in. He pondered for a time in considerable confusion, but finally found an item he could answer. To the query, "What machines can you operate?" he wrote confidently: "Slot and Pin Ball."

★

A youngster was saying his bedtime prayers in a low voice.

"I can't hear you, dear," whispered his mother.

"I wasn't talking to you," was the firm reply.

★

Clothes can still make the man... especially if he's in the clothing business at today's prices.

★

A foreign correspondent was interviewing a workman in Warsaw. "Are you for the present regime?" he inquired.

"I sure am," the worker promptly replied. "I'm one of the happiest people in the world. I've a large apartment, a separate bathroom, as much fuel and electricity as I can use, my own radio..."

"Really? You have a radio?" said the newspaperman in surprise.

"Why, of course!" said the worker. "How else could I possibly know that I have a large apartment, a separate bathroom, electricity and plenty of heat? How else would I know that I belong to the happiest people on earth?"

★

The devil was always challenging St. Peter to a game of baseball, but St. Peter never took him up. Finally, the Dodgers, the Giants and the Yanks all went to heaven. So naturally St. Peter called up the devil.

"Now I'll play you that game of baseball," he said.

"You'll lose," said the devil, "you'll lose."

"Oh, yeah?" replied St. Peter. "Right now I've got the greatest collection of baseball players you ever saw."

"You'll lose," said the devil. "You'll lose!"

"What makes you so sure we'll lose?"

"Because," laughed the devil, "we got all the umpires down here."

★

An angry little man bounced into the postmaster's office and complained that, for some time, he had been pestered by threatening letters.

"I'm sure we can help," soothed the postmaster. "That's a federal offense. Have you an idea who is sending you these letters?"

"I certainly have," snapped the little man. "They are coming from those pesky income tax people."

★

She—I wish you had telephoned before you came. I'm sorry for my appearance.

Bore—Your appearance?

She—Yes, if I had known you were coming, I wouldn't have made one.

★

Aunt Minnie says she can't understand why folks smoke because half of every cigarette goes for taxes and the other half goes into the ash-tray.

★

"Thankful!" grumbled the sourpuss to the sunshine spreader. "What have I got to be thankful for? Why I can't even pay my bills."

"In that case," prompted the other, "be thankful that you aren't one of your creditors."



NEW TRADEMARK—Newly-designed Trona trademark (top) for complete line of American Potash & Chemical Corp. products is displayed with former trademark (lower) by William J. F. Francis, vice president in charge of sales for the chemical company.

American Potash Adopts New Trademark For Trona Products

LOS ANGELES—American Potash & Chemical Corp. has adopted a new trademark for its complete line of Trona tradenamed products. Adoption of the new trademark is one of the final steps in the company's program to modernize its product packages and labels, according to William J. F. Francis, vice president in charge of sales.

The redesign program was begun three years ago and included a complete revamping of package designs and product labels for American Potash & Chemical Corp.'s more-than-60 products.

Purpose of the change in design, according to Mr. Francis, was "to combine efficiency with eye-appeal to provide better servicing for company customers."

The new trademark includes the company's long-used oval design, with a white large-lettered Trona imprinted on a background of blue and orange. Previously, the company's trademark included, in addition to the Trona name, two of its subsidiaries and the line, "Industrial and Agricultural Chemicals."

"The simplified design not only has considerably more eye-appeal," Mr. Francis said, "but is legible from a distance between two and three times greater than the former design."

Wheat Sawfly Found In California County

SACRAMENTO—The wheat sawfly has been found in Modoc County, California, the first infestation reported in the state outside the Cuyama Valley in Santa Barbara and San Luis Obispo Counties.

The fly, in larval form, was reported in Lake City in the extreme northeastern part of California, adjacent to a portion of Oregon where the pest has been known to exist for several years.

It is not anticipated that control measures will be necessary in Modoc County but developments will be watched closely by the agricultural commissioner and the Department of Agriculture.

In 1953, wheat sawfly was responsible for the destruction of 200 acres of wheat in the Cuyama Valley.

MOSQUITO CONTROL

DOVER, DEL.—The Delaware General Assembly has passed a measure appropriating \$225,000 for mosquito control work this summer.

CONTROL OFFICIALS

(Continued from page 1)

work at the Morrow Plots at the University of Illinois and the Jordan Plots at Pennsylvania State University, Dr. Coleman said that "it appears from these results that plant food applied in adequate amounts may be able to restore the productivity of soils previously considered unproductive. Plant food will, therefore, play an ever increasing role in protecting the nation's most important resource—our soil productivity."

Dr. Coleman also presented tables to illustrate how farmers, by using the approved production practices, could make more profit by actually growing less corn and cotton than is now being produced.

He said that he believed it to be a sound principle that "proper plant food applications could be used to increase net farm income and at the same time could contribute toward solving our surplus problem."

H. L. Dunton, head of the agronomy department at Virginia Polytechnic Institute, Blacksburg, Va., spoke on "Factors Affecting Efficient Fertilization." Mr. Dunton presented the same talk at the annual meeting of the Del-Mar-Va Peninsula Fertilizer Assn. A reprint of it will be found on page 2 of this issue of Croplife.

John D. Conner, member of the Washington, D.C., law firm of Cummings, Sellers, Reeves & Conner, talked on the subject, "The Legal Framework for Regulatory Control."

He said that there is a real need for uniformity between the state laws administered by control officials, and he urged the officials to take the leadership to bring this uniformity about.

He also advised the officials to "concern yourself primarily with fundamentals and do not get lost in a maze of details. Do not lose sight of the fact that your job as an enforcement official is to prevent fraud and deception in the sale of fertilizer, feeds and pesticides. Do not become so engrossed in the details of labeling, registration and other minutiae that you lose sight of your primary enforcement problems. To the extent to which you attempt to regulate the minutiae of labeling, you make uniformity that much more difficult."

Mr. Conner also urged the officials not to make regulatory requirements which they do not intend to enforce. "In other words, do not impose a harsh regulatory policy with the expectation of moderating it with a soft enforcement policy," he said.

M. A. Manzelli, Virginia-Carolina Chemical Corp., Richmond, Va., discussed recent developments in the chemical control of nematodes. He said that since nematodes have not been declared pests within the meaning of the Federal Insecticide, Fungicide and Rodenticide Act of 1947, products used in their control are not subject to the Federal Act. However, some 33 states require the registration of nematocides intended for sale and use within their borders.

The only states which do not require such registration of nematocides, are Connecticut, Delaware, Illinois, Iowa, Kansas, Kentucky, Mississippi, Idaho, Massachusetts, Nebraska, New York, Ohio and West Virginia.

Practically all plants, including weeds as well as crops of commercial value, are hosts for soil or plant nematodes, he said. Damage done to crops by nematodes amounts to about 1/2 billion dollars a year, he said. "This sum emphasizes, in a way, how difficult it is to control these microscopic inhabitants of the soil. They possess a great ability to withstand unfavorable environmental conditions."

Along this line he summarized some of the facts concerning the

mode of survival of plant parasitic nematodes by pointing out that many species are capable of surviving unfavorable environmental conditions such as drying, freezing, etc., by becoming dormant or quiescent for periods of several months duration; some species are capable of surviving many years in stored plant tissue if they are kept dry; and cyst-forming species of Heterodera are capable of surviving in the soil irrespective of moisture for as long as eight years in the absence of a host plant. He added that populations of plant parasitic nematodes survive in the residual roots of some perennial plants for many years after the plant has been pulled.

Chemical control of nematodes has been practiced for many years, Mr. Manzelli said, and reviewed some of the history of control compounds since carbon disulfide was first used in 1821 to control the sugar beet nematode. He outlined the steps taken down to the present time, and reported that the search for new nematocides is continuing at an accelerated pace. Inasmuch as we are looking for the ideal nematocide, it would be of interest to list the properties required of a compound, or of a chemical formulation, in order for it to qualify as an ideal nematocide. Such ideal properties are as follows, although not necessarily in the order of their importance: non-phytotoxic, non-specific, volatile, residual, systemic, capable of being applied either as a water solution or as a solid, non-toxic to mammals, and, of course, low in cost.

"Upon reviewing this list of desired properties it will be seen that although some good nematocides have resulted from our over-all research endeavors, the ideal one has as yet to be found," he concluded.

A special feature of the meeting was the banquet, at which the principal speaker was W. C. Jacobsen, director of the California Department of Agriculture and president of the National Association of Commissioners, Secretaries and Directors of Agriculture.

Mr. Etheredge opened the formal portion of the meeting with an address on "Southern Standards."

The 1957 meeting of the association has been tentatively scheduled at Birmingham, Ala., June 17-19.

Work Starts on New Southwestern Agrochemical Plant

CHANDLER, ARIZ. — Ground-breaking ceremonies were held here recently for the first unit of the \$5 million Southwestern Agrochemical Corp. fertilizer and ammonia manufacturing plant.

J. Clyde Wilson, chairman of the board, said that the firm will produce solid fertilizer at a plant with capacity of about one third the present state consumption.

Utah Construction Co., San Francisco, is general contractor. (For an earlier story of the new facilities see page 1 of the July 25, 1955 issue of Croplife.)

LAW FIRMS CONSOLIDATE

WASHINGTON, D.C. — John D. Conner, Washington attorney well known in both the pesticide and fertilizer industries, has announced that the firm of Sellers & Conner, of which he is a partner, has consolidated with the law firm of Cummings, Truitt and Reeves. The name of the new firm is Cummings, Sellers, Reeves & Conner. Its location is in the Commonwealth Building, 1625 K St., N.W.

New Labeling Required on Pesticides Sold in Kentucky

LEXINGTON, KY. — All pesticides and economic poisons may be sold in Kentucky only in containers that have "approved appropriate labeling." This is required under new Kentucky law which became effective July 1, 1956, says Bruce Poundstone, Kentucky Agricultural Experiment Station Feed and Fertilizer Department head.

This means, says Mr. Poundstone, the "dealers handling insecticides, weed killers and similar products must label containers if the manufacturer's original container is broken and the product divided into smaller portions for distribution."

Thus it is now illegal to sell such products in bottles, fruit jars and other containers—except where each container bears appropriate labeling.

Dealers wishing to repackage insecticides or other economic poisons for sale must apply to Mr. Poundstone's office for a license to sell each product; submit proposals for labeling; and attach a label to each package. In most instances, Mr. Poundstone noted, the dealers can duplicate the original labeling with the exception of the manufacturer's or distributor's name.

"Dealers in pesticides and economic poisons who do not wish to repackage these products, but desire to meet demands for small quantities, should stock packages of a size that do not require opening," Mr. Poundstone said.

GYPSY MOTH

(Continued from page 1)

listing counties and other civil divisions in which infestations of the gypsy moth or brown-tail moth occur or which should be regulated for other reasons. Localities so designated then constitute regulated area.

Localities that have been added to the gypsy moth regulated area for the first time are:

Connecticut—Fairfield County, 2 towns in Litchfield County and 3 towns in New Haven County, constituting all presently nonregulated area in the state.

Maine — One town in Penobscot County and 4 towns in Piscataquis County.

New York—Counties of Clinton, Delaware, Nassau, Orange, Otsego, Putnam, Rockland, Schoharie, Suffolk, Sullivan, Ulster and Westchester; 1 town in Albany County, 4 towns and one city in Columbia County, 17 towns and 2 cities in Dutchess County, 7 towns in Essex County, 5 towns in Fulton County, 12 towns in Greene County, 3 towns in Hamilton County, 16 towns and 1 city in Herkimer County, 1 town in Madison County and 11 towns in Oneida County.

Vermont—Grande Isle County, 3 towns in Chittenden County and 9 towns in Franklin County.

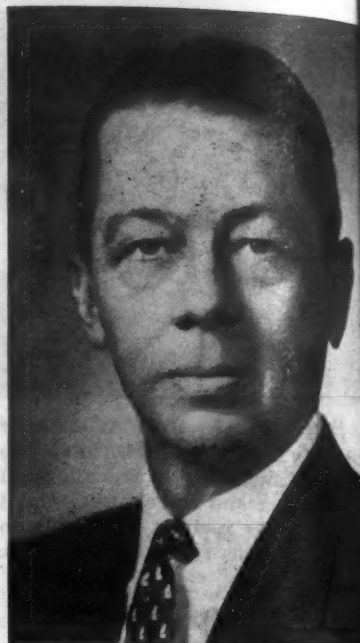
The chief of the Plant Pest Control Branch also is authorized to provide for issuance of certificates of exemption for premises which have been inspected or treated in accordance with approved procedures and permit the movement of regulated articles from such premises without certification.

Percy Kent Moves

NEW YORK — After nearly 70 years in locations in the vicinity of Worth St., the Percy Kent Bag Co. has moved its New York office from 93 Worth St. to 45 Rockefeller Plaza.

MANAGER MOVES

PORTLAND, ORE.—Bill Conger, Tillamook (Ore.) Farmers Cooperative manager for the past four years, has resigned to accept a position with the Farmers Supply Cooperative at Ontario, Ore. He succeeds Clarence Newcombe, who moved to Idaho.



C. Meredith Evans, Jr.

C. Meredith Evans, Jr., Named Head of V-C Cincinnati Sales Office

RICHMOND — C. Meredith Evans, Jr., formerly assistant manager Virginia-Carolina Chemical Corp., Richmond, Va., sales office, has been named manager of the firm's Cincinnati sales office. He succeeds A. Darfus who retired June 30 after years of service with V-C.

A native Virginian, Mr. Evans is a graduate of the University of Richmond. He joined V-C in 1935. From 1940 to 1946, Evans served with the Army Corps of Engineers. A captain, he was stationed at Hawaii, Guam and Okinawa.

Dow Appoints Two In Agricultural Chemical Sales

MIDLAND, MICH. — The Dow Chemical Co. has announced two appointments in agricultural chemical sales. Milton B. Irvine has been appointed to a product manager position in the farm use products section and Russell H. Ashworth, a Dow employee between 1941 and 1954, has joined the company in the same section.

In his new capacity, Mr. Irvine, formerly with the company's St. Louis sales office, will handle insecticides, fungicides and chelates. W. V. Allen, departmental manager, said. He moves into the post held by the late Dan O. Sanford. For the past two years Mr. Irvine has been handling the sale of general and agricultural chemicals in Wyoming, Colorado and New Mexico. He made his headquarters in Englewood, Colo.

Mr. Irvine has been with Dow since 1945. In addition to sales activities he has worked extensively in research and technical service with agricultural chemicals in the Southwest and West. He received a B.S. degree in agriculture from the University of California in 1942.

Mr. Ashworth will be responsible for the sale of herbicides. Since early 1954 he has been with Pontiac Mill Inc., Pontiac, Mich., as sales manager handling the distribution of agricultural chemicals. He received an A.B. degree from Central Michigan College in 1934.

Salt Lake City Firm to Expand

SALT LAKE CITY—The Alunite Corp. here is offering 160,000 shares of common stock at \$1.50 a share. Proceeds will be used to expand the alunite plant at Marysville, Utah, and to build a new bagging plant at Salt Lake City. G. Owen Lovejoy, president, said. Alunite is the principal ingredient in the firm's plant food product.

FERTILIZER COMBINATIONS

Kentucky Experimental Fields Show Value of Good Practices

Editor's Note

The accompanying article is reprinted from the spring issue of *Kentucky Farm and Home Science*, a publication of the Kentucky Agricultural Experiment Station, Lexington. The author is Eugene C. Doll, assistant agronomist at the station.

The results of the general-fertility station experiments which were conducted for many years in several Kentucky counties markedly show effectiveness of good fertilization and soil management practices in increasing and maintaining crop yields. These experiment fields were located at Berea, Campbellsville, Greene, Fariston and Mayfield and at Western Kentucky Substation at Princeton.

Three- or four-year rotation of corn, wheat and either one or two years of a mixed grass-legume hay followed. These experiments were designed to test the effect of applications of limestone and various fertilizer combinations on the yields of the various crops grown in rotation.

Applications of ground limestone have resulted in increased yields on most of the upland soils in Kentucky. Soil increases which can be attributed to limestone were obtained for three crops grown in the rotation (corn, wheat and hay).

However, the most striking effect of limestone is shown by the increased yield and quality of the hay. Furthermore, adequate applications of limestone resulted in more effective utilization of the other fertilizer elements, particularly phosphorus.

These experiments have shown that phosphate fertilization of all of the major upland soils of Kentucky (except for the high-phosphate soils of the Inner Bluegrass Region) is necessary for good crop production. Twenty-five or thirty years ago, phosphorus was generally the most deficient of the three major fertilizer elements (nitrogen, phosphorus, potash).

Limestone and phosphate alone, however, are not sufficient to maintain high yields, but must be properly balanced with nitrogen and potash. Nitrogen, phosphorus, and potash may be supplied by crop residues and farm manure as well as through the use of commercial fertilizers. The results obtained at the Greenville Soil Experiment Field given in Table 1 are typical of the data obtained from the soil experiment fields.

Table 1—Greenville Soil Experiment Field, 1948-54

Fertilizer Treatment	Corn (bu.)		Wheat (bu.)		Hay (lb.)	
	1st	2nd	1st	2nd	1st	2nd
No fertilizer	18.0	4.6	1,550	1,950		
Phosphorus	37.6	16.5	2,450	2,800		
Phosphorus and Potash	50.8	18.1	2,530	2,800		
Nitrogen, phosphorus and potash	51.4	25.5	2,700	2,800		
Limestone, nitrogen, phosphorus and potash	55.6	31.5	3,400	3,200		

The data in Table 1 illustrate the differences in yield among plots which received different fertilizer treatments, and differences have been consistent from year to year. During a long-time experiment, however, the tendency of the yields from plots receiving the same fertilizer and other management treatments to increase or decrease over a period of years is as important as the differences in yield between plots receiving different treatments. An experiment must be conducted for a considerable time before these trends become apparent.

At all of the locations in Kentucky where long-time experiments have been conducted, the yields from the plots which received complete fer-

tilizer treatments tended to increase from year to year, while those from plots which received either no fertilizer or an incomplete or unbalanced fertilizer tended to remain more nearly constant or have decreased slightly.

Because of the large annual fluctuations in yields, owing mostly to varying weather conditions, it is necessary to calculate the yields from the various plots in terms of linear regressions in order to measure accurately the annual changes in yield resulting from a particular fertilization or other management treatment.

Figure 1 illustrates the trends in the yield of ear corn obtained in an experiment conducted at the Western Kentucky Substation over a period of 26 years.

The information obtained from the long-time rotation experiments has been extremely valuable in formulating fertilizer and soil management recommendations. The necessity of proper fertilization has been clearly shown, and the increased yields from plots which have received the same treatment show the value of continued fertilization for a period of years. Furthermore, in spite of the fact that the soils at the various locations vary considerably, the results obtained at the different fields are remarkably similar.

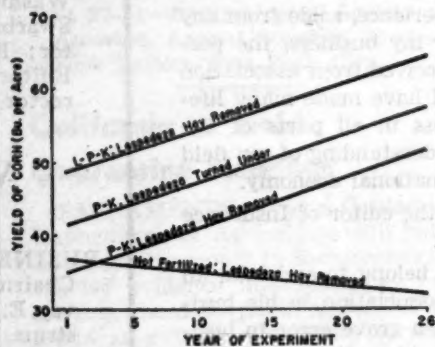


Fig. 1—Yield of corn grown in a 3-year rotation in wheat and lespedeza at the Western Kentucky Agricultural Substation, Princeton, over a 26-year period. Fertilizer treatments included combinations of limestone (L), phosphorus (P), and Potash (K).

Alabama Fertilizer Sales Show May Gain

MONTGOMERY, ALA.—Sales of mixed fertilizer and fertilizer materials in Alabama for May amounted to 155,508 tons, compared with 114,010 tons delivered during the same month in 1955, according to a report released by the State Department of Agriculture and Industries. However, the movement from October, 1955, through May, 1956, totaling 921,447 tons, showed a small decline from the figure of 980,042 tons recorded for the same period in the previous year.

Largest percentage increase in mixed fertilizers in May was 4-12-12 which climbed into second place in state sales. Leading mixture continues to be 4-10-7. Among nitrogenous side-dressing materials, nitrate of soda led, followed by ammonium nitrate and 20.5% nitrate compounds.

BENEFIT FROM FLOOD

PORTLAND, ORE.—This year's Columbia River flood did a lot of damage, but at least one person believes it did some good, too. Don Coin Walrad, Columbia County Agent, reports that many of the low areas flooded were covered with tansy ragwort. Since many of them have been under water for some time it's quite likely that all of this year's crop has been killed and there will be little likelihood of it going to seed.

Three Florida Counties Added to Medfly Regulated Area

WASHINGTON—Three west-coast Florida counties—Lee, Hendry and Collier—were added to the Mediterranean fruit fly regulated area in an amended quarantine order effective July 7, the U.S. Department of Agriculture has announced. With the addition of these three counties to previously regulated Broward, Dade and Palm Beach counties, the area under federal regulation now includes all except one county in the southern fifth of the state.

There are numerous spot infestations of the Mediterranean fruit fly in counties north of those regulated, USDA said. Each isolated infestation discovered has been promptly treated with a poison-bait spray. In addition, these solitary infestations are under constant state surveillance and regulation, as provided by the Florida Plant Act. In their present status, a USDA spokesman explained, it is not necessary to place them under federal regulation.

Following Soil Test Recommendation Pays Off For Arkansas Farmer

PARAGOULD, ARK.—Greene County farmers have found that following soil test recommendations in fertilizing cotton increases yields 25% to 50%, Shirl Ward, assistant county agent, said.

H. E. Duncan of Paragould has been raising cotton for the past 20 years. In the past, he has used 3-9-18 fertilizer at the rate of about 200 lb. per acre on his cotton land. Mr. Duncan plants the Empire variety, and average production has been from one fourth to three fourths bale per acre.

Early in 1955, Mr. Duncan heard the county agent explain the importance of having soil tested to determine the right amount and kind of fertilizer. He took samples of his cotton land and had the county agent send the samples to the soil testing laboratory to be tested.

The tests showed that Mr. Duncan should apply 300 lb. of 12-12-12 per acre. He followed these recommendations and produced more than one bale per acre for the first time.

Mr. Duncan is convinced that following soil test recommendations in the fertilization of his cotton was largely responsible for this increase in production. In fact, he is so pleased with these results he is having all of his soil tested in the future.

Curly Top Disease Damaging in California

SACRAMENTO—The agricultural commissioner of Imperial County, California, has reported to the State Department of Agriculture that curly top disease, spread by beet leafhoppers, has caused five to 10 million dollars in crop damage this year.

Damage to flax plantings will run to \$1,500,000 and to sugar beets \$1,500,000. In addition, about 7,000 acres of canning tomato plants were killed and severe damage inflicted on squash, melons, cucumbers and other vegetables.

The department said the one single factor leading to the damage from the leafhopper-spread disease is the year round planting and harvesting in Imperial County of sugar beets, creating an ideal breeding ground for the leafhopper.

State, county and University of California personnel are investigating development of a control program. The department said only light occurrence of curly top disease had been reported in the San Joaquin Valley where a large scale control program is conducted each year.

SAGEBRUSH CONTROL

(Continued from page 1)

ways compete cost-wise with plowing and burning as a method of sagebrush control. However, spraying this chemical does serve an important range-improving function on lands that are too thin to burn, they said. When such difficult areas are chemically freed from sagebrush, native or sown grasses can be established, thus increasing the livestock-carrying capacity of the land and providing protection against soil erosion.

The butyl-ester form of 2,4-D acid was particularly outstanding in both effectiveness and economy. However, butyl ester 2,4-D is highly volatile and should not be used in areas where, because of drift, the chemical might cause damage to nearby crops, the scientists said. In such situations, they recommend the use of either of two low-volatility ester forms of 2,4-D—butoxy ethanol or propylene glycol butyl.

The scientists obtained the best sagebrush kill when the butyl-ester form of 2,4-D was applied to the foliage of rapidly growing sagebrush after the plants had put on about 3 to 4 inches of new twig growth. They found that the herbicide could be applied by ground rig, airplane or helicopter. In all cases, adequate control was achieved with a treatment using, per acre, 2 lb. of 2,4-D acid equivalent in an emulsion of 9 gal. of water and a half gallon of diesel oil.

In one of the largest tests, covering an area of 1,750 acres in the Lassen National Forest, aerial-treatment with butyl-ester 2,4-D resulted in an 88.5% kill of sagebrush despite some misses due to wind-drift spray and errors in swath alignment. In the South Warner Mountains of the Modoc National Forest, sagebrush kill averaged 99%.

The scientists emphasized that spraying alone is not the full answer to improving sagebrush ranges. To achieve full benefits and maintain them, deferment of grazing is necessary for one year and grazing management must be good thereafter. With proper handling, good native grasses will come back, reseeded species will become established, and sagebrush will be slower in returning.

SOIL REPORT

URBANA, ILL.—The soil survey group of the agronomy department at the University of Illinois College of Agriculture has published a new soil report for Lawrence County, the 78th in its series that eventually will cover all Illinois counties.

INSECT NOTES

(Continued from page 5)

area, *Phillostoma quadrimaculatus* and *Aulocara ellioti*, have begun laying eggs. Recent rain showers have brought much needed moisture to this area of the state and the short grass pastures are greening up. Elsewhere in Kansas, adult grasshoppers are moving into row crops, corn fields, soybeans, and into home gardens.

Many patches of potatoes have been reduced to stems by blister beetle feeding activity. These insects are also working in many home gardens and on shade and ornamentals in some areas of the state. Blister beetles have been reported heavy on acreages of tomatoes being grown for market in Kiowa County, southwest Kansas truck garden area.

Horn fly populations on range cattle in Comanche and Barber counties ranged from 40 to 180 flies per animal. Populations have not increased in this area during the last three weeks.—Dave Matthew.

Croplife

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Southern states.

Research Should Continue Despite Present Surplus

"Why, during times of abundance and farm surpluses, should agricultural research be continued?" is a question in the minds of many. To these people, the idea of finding ways to increase production of farm goods seems both strange and unnecessary, when at the same time government storehouses are bulging with surpluses.

Yet, we feel that in the long run, both agriculture and the whole economy will benefit from continued study of production methods . . . of new chemicals for making crops grow faster and for controlling both plant disease and insect pests that cut down on output.

An authoritative voice has been heard in support of continued research; that of Sherman E. Johnson, director of farm and land management research of the Agricultural Research Service, USDA, Washington, D.C. In a recent talk he expanded on this thesis, declaring that we can ill afford to curtail our research efforts.

"In my opinion," he said, "agriculture in this country must keep step with progress in the rest of the economy in order to attract and retain persons of ability in farm occupations. Our agriculture also must keep step with technological progress in other countries in order to hold our place in world markets. Therefore, the only logical choice seems to be to continue research and discovery in the production field, and to utilize the results whenever they become available."

"A basic research program to develop fundamental knowledge concerning agriculture," he said, "needs to go forward at all times and in all fields. But research applied to specific problems can and should be geared to provide maximum assistance on problems that farmers are likely to face in the years ahead."

"In looking ahead, we need to differentiate between prospects for the next several years and the longer-term outlook. We need to recognize that as a result of war-time expansion, we have productive capacity more than ample for today's markets. In fact, output in 1955 was nearly large enough in volume to meet the projected needs of 1960. But we produced much too much of some products and too little of others to balance with potential needs in 1960.

"We also need to ponder the narrowness of the margin between abundance and scarcity. What happened after the Korean outbreak could occur again. A new international emergency, or even a serious drought, could change the surplus struggle to a concern over deficits. Even our present large carryover of concentrate feeds represents only about 4 months' supply.

"Because of the narrow margin between abundance and scarcity, and because of uncertainties with respect to drought and international developments, we should maintain reserve capacity that will permit us to increase output quickly if the need should arise.

"Considering population increases and general growth in the economy, we should be able to achieve a better balance between production and markets than we now have. Recent projections indicate that we may need about a 30% increase in output during the next 20 years in order to meet market demands at the end of that period.

"Barring unforeseen emergencies, very little of this increase will be needed in the next few years. And even in the latter part of the 20-year period, I see no reason for worry about 'food enough' under peacetime conditions. The more important questions will be how to gear production expansion to

market prospects, and how to produce the needed products efficiently, with returns to farmers comparable to other groups."

Agriculture is obviously in a period of transition, and technological developments are continuing to make possible greater farm production with fewer individuals working in this area. Research should not only provide guidance in adjustment to those who continue to find their best economic opportunities in farming, but also to assist those who will benefit by shifting to other employment. Large-scale adjustments of this type certainly don't just happen. They need research guidance and program assistance as well.

Importance of Trade Association Pointed Out

Raymond Blattenberger, public printer of the United States, made some singularly significant remarks, in a recent address, on trade associations. He said: "I would no more want to be in a business without a trade association than in a community without churches. Just as churches set up the moral environment in which to live and raise a family, so do trade associations provide the ethical and economic setting in which to run a business. From my own experience, aside from any benefits to my company or my business, the personal satisfaction I have received from association work was reward enough. I have made many lifetime friends in the business in all parts of the country. I have a better understanding of my field and its importance to the national economy."

Quoting this panegyric, the editor of Insurance Field joins the chorus with:

"The man who does not belong to and take an active interest in a trade association in his business is not only committing a grave error in business judgment but is denying himself many obvious as well as hidden benefits and the indescribable thrill and satisfaction that comes from working together with his fellow man. Likely as not he is a poor citizen as standards go. Likely as not he is a nonentity in the community in which he lives and plies his trade. And likely as not his success is mediocre and his horizons no higher than his boot tops."

The editor of Insurance Field had no need to resort to his didactic "likelies." He could have rested convincingly upon the conclusion that "a business without a trade association is like a ship without a sail," or upon his somewhat less easily comprehensible alternative metaphor, "a shirt without a tail."

Quote

"Of all the problems facing free enterprise democracy in the United States, the agricultural problem is probably the most vexing. It wins this distinction on a number of points. Dollarwise, it is very big—attempts at its 'solution' have cost nearly \$2.5 billion in this fiscal year. It is growing larger . . . it could cost over \$5 billion. It has the peculiar characteristic that the more we spend in trying to solve it, the worse it inevitably gets. And, what makes the solution seem hopeless, the whole field of agricultural policy is too often characterized by confused and demagogic thinking.

"One result of that kind of thinking is that we seem to have lost sight of a basic distinction—the distinction between a farm program designed to cope with poverty and a program applicable to prosperity. Harkening to the plans coming out of Washington, the ordinary citizen might assume that American agriculture is all but bankrupt . . . The fact is that, by any previous standard, American agriculture, especially commercial agriculture, is prosperous . . ."—Dr. G. B. Wood, Oregon State College, Corvallis, in a talk, "Faith, Hope and Parity" before recent California Fertilizer Conference, Riverside, Cal.



Croplife



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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is \$5 for one year (\$8 a year outside the U.S.). Single copy price, 25¢.

LAWRENCE A. LONG

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MEETING MEMOS

July 19-20—Southwestern Fertilizer Conference and Grade Hearing, Buccaneer Hotel, Galveston, Texas.

July 25-27—Northwest Association of Horticulturists, Entomologists and Plant Pathologists Conference, Northwest Washington Experiment Station, Mount Vernon, Wash.

July 26-27—Illinois Fertilizer Conference, University of Illinois, Urbana, Ill.

Aug. 1—Kentucky Fertilizer Conference, Guilford Theatre, University of Kentucky, Lexington, Ky.

Aug. 2-3—Nitrogen Field Day and Equipment Demonstration, Ohio State University, Columbus, Ohio.

Aug. 14-15—Ohio Pesticide Institute, Summer Meeting, Ohio Agricultural Experiment Station, Wooster, Ohio, J. D. Wilson, Wooster, Ohio, Secretary.

Aug. 17-25—Tenth International Congress of Entomology, McGill University and University of Montreal, Montreal, Canada, J. A. Downes, Science Service Bldg., Carling Ave., Ottawa, Ontario, Canada, Congress Secretary.

Aug. 20-22—Corn Belt Branch, American Society of Agronomy, Summer Meeting, Purdue University, Lafayette, Ind.

Aug. 22-24—Beltwide Cotton Mechanization Conference, Atlanta Biltmore, Atlanta, Ga., sponsored by National Cotton Council.

Aug. 24—Grassland-Dairy Field Day in Observance of the 25th Anniversary of Rutgers University Dairy Research Farm, Beemerville, N.J.

Aug. 28-29—Fertilizer Meeting, Nebraska Agricultural College, Lincoln, Neb. Sponsored by the Agricultural Ammonia Institute.

Aug. 30—South Carolina Plant Food Educational Society, Clemson House, Clemson, S.C.

Sept. 5-7—National Agricultural Chemicals Assn., 23rd Annual Meeting, Essex and Sussex, Spring Lake, N.J., L. S. Hitchner, 1145 19th St. N.W., Washington, D.C., Executive Secretary.

Oct. 9—Western Agricultural Chemicals Assn., Fall Meeting, Villa Hotel, San Mateo, Cal., C. O. Barnard, 2466 Kenwood Ave., San Jose, 28, Cal., Executive Secretary.

Oct. 15—Fifth Annual Chemical Sales Clinic, Hotel Commodore, New York, Sponsored by the Salesmen's Association of the American Chemical Industry.

Oct. 15—Fifth Annual Chemical Sales Clinic, the Salesmen's Association of the American Chemical Industry; Hotel Commodore, New York City; chairman, Preston F. Tinsley, Westvaco Chlor-Alkali Division, Food Machinery and Chemical Corp., 161 East 42nd St., New York 17, N.Y.

Oct. 16-17—National Nitrogen Solutions Assn., Annual Meeting and Trade Show, City Auditorium, Sioux City, Iowa; John White, Auburn, Neb., secretary.

Oct. 18-18—Fertilizer Industry Round Table, Shoreham Hotel, Washington, D.C. Vincent Sauchelli, Chief Agronomist, Davison Chemical Co., Div. W. R. Grace Co., Baltimore 3, Md., chairman.

Oct. 18-19—Association of American Fertilizer Control Officials, Shoreham Hotel, Washington, D.C., B. D. Cloaninger, Clemson Agricultural College, Clemson, S.C., secretary-treasurer.

Oct. 23-24—Pacific Northwest Garden Supply Trade Show, Shrine Auditorium, Portland, Ore.

Oct. 25—Middle West Soil Improvement Committee, Annual Meeting, Sherman Hotel, Chicago; Z. H.

Beers, Executive Secretary, 228 N. La Salle St., Chicago 1, Ill.

Nov. 2—Joint Agronomy-Industry Work Conference, Atlanta Biltmore Hotel, Atlanta, Ga.

Nov. 7-9—Agricultural Ammonia Institute, Annual Convention, Atlanta Biltmore Hotel, Atlanta, Ga., Jack F. Criswell, Claridge Hotel, Memphis, executive vice president.

Nov. 7-9—Pacific Northwest Plant Food Assn., Annual Convention, Harrison Hot Springs Hotel, Harrison Hot Springs, British Columbia, Leon S. Jackson, Lewis Bldg., Portland, Ore., secretary.

Nov. 11-13—California Fertilizer Assn., 33rd annual convention, Del Coronado Hotel, Coronado, Cal.; Sidney H. Bierly, executive secretary, 475 Huntington Drive, San Marino 9, Cal.

Nov. 19-20—Eastern Branch, Entomological Society of America, Hotel Haddon Hall, Atlantic City, N.J., B. F. Driggers, Rutgers University, New Brunswick, N.J., secretary.

Nov. 28—Oklahoma Fertilizer Dealers Conference, Sponsored by the Oklahoma Plant Food Educational Society, Oklahoma A&M College, Stillwater.

Nov. 29—Oklahoma Soils and Crops Conference, Oklahoma A&M College, Stillwater.

Dec. 27-31—Entomological Society of America, Annual Meeting, Hotel New Yorker, New York City.

California to Hold Quarantine Hearings

SACRAMENTO—The California Department of Agriculture will hold hearings this month in Sacramento to receive evidence and testimony regarding the department's proposal to adopt an exterior quarantine to prevent introduction into the state of several insect pests of walnuts.

The department proposes to place all states and districts of the U.S. under quarantine because of walnut husk flies, the hickory shuck worm, pecan nut case borer, butternut curculio and black walnut curculio, all of which are serious pests of hickory nuts, pecan nuts, walnuts and butternuts.

An interior quarantine also is proposed against the counties of Imperial, Los Angeles, Orange, Riverside, San Diego and portions of Kern, San Bernardino and Sonoma in order to prevent further spread of one of the walnut husk flies into unfested areas of California.

Paul D. Littlefield New Freeport Treasurer

NEW YORK—Paul D. Littlefield has been elected treasurer of Freeport Sulphur Co., Langbourne M. Williams, president, has announced.

Mr. Littlefield joined Freeport in 1948 as an assistant in the budget department. He later became manager of budgets and cost control and in January, 1956, he was elected assistant treasurer. Mr. Littlefield was graduated from Harvard College in 1942 and from the Harvard business School in 1948.

MOLYBDENUM ADDED

BALTIMORE, MD.—Miller Chemical & Fertilizer Corp. has announced that it is now including molybdenum in its fertilizer products, both solid and liquid. The two soluble fertilizers, a 20-20-20 and a 10-10-8, contain the equivalent of .088% molybdenum oxide in addition to all the other common trace elements, the company's announcement states.

Nitrogen Fertilizer Meeting Scheduled at Ohio State University

COLUMBUS, OHIO—The Agricultural Ammonia Institute and nitrogen producers are cooperating with Ohio State University in a nitrogen fertilizer meeting scheduled for Aug. 2-3 at Ohio State University here.

Dr. G. M. Volk, chairman of the Ohio State agronomy department, will be in charge of the meeting, which will be held at University Farm.

The program will begin at 1 p.m. Aug. 2 with members of the agronomy department giving talks at the livestock pavilion in Plumb Hall on the campus. A tour of the Agronomic research plots will follow. Highlights of the tour, according to Dr. Volk, will be a visit to extensive plot layouts where anhydrous ammonia nitrogen in solution and solid forms have been used on corn, sorghum, sudan grass and oats at three rates of application.

On Aug. 3 there will be a short inspection tour of pasture plots that have received the three forms of nitrogen fertilizer. A second speaking program will follow. After a luncheon, there will be demonstrations of all kinds of fertilizer applicators.

North Carolina Sales

RALEIGH, N.C.—Fertilizer sales in North Carolina during May totaled 235,304 tons, compared with 216,217 tons in May, 1955. Sales for the first 11 months of the fiscal year (July-May) totaled 1,561,226 tons, compared with 1,757,969 tons in a corresponding period in 1954-55.

OREGON FIELD DAY

PORTLAND, ORE.—The annual Oregon State College vegetable crops field day is scheduled Aug. 2 on the Corvallis campus. Major stress is being placed on research with green beans and the morning tour starting at 9:30 will be devoted to the crop. There will be research workers on hand to explain various details concerning experimental bean plantings.

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge \$2.25. Situations wanted, 10¢ a word; \$1.50 minimum. Count six words of signature, whether for direct reply or keyed care of this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Classified advertising rate not available for commercial advertising. Advertisements of new machinery, products and services accepted for insertion at minimum rate of \$9 per column inch. All Want Ads cash with order.

HELP WANTED

MANAGER FOR LARGE FERTILIZER plant—North Midwest Area—Granulation experience preferred. Give age, education, experience, first letter. Address Ad No. 1827, Croplife, P. O. Box 67, Minneapolis 1, Minn.

SALES MANAGER WANTED—AGRICULTURAL background essential, must be able to set up own sales department, take care of advertising and all related items. New fertilizer plant going up in the Midwest. Address Ad No. 1865, Croplife, P. O. Box 67, Minneapolis 1, Minn.

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ENTOLETER CENTRIFUGAL MIXER NO. 111231, 4 type BF2, 10 H.P., 220/440 volts, 3 phase, 60 cycles, 3500 rpm, rated capacity 16,000 lbs. per hour. New—has never been uncrated. \$1200 f.o.b. Friant, California. Screen—Selectro unit manufactured by Productive Equipment Corp. Totally enclosed, single 2' x 8' screen. Now equipped with 100 mesh hi-temp screen metal cloth. New—never used. \$1,000 f.o.b. Friant, California. California Industrial Minerals Company, P.O. Box 188, Friant, California.

AGRONOMY FIELD DAY

MORGANTOWN, W.VA.—Plans for the 1956 West Virginia University agronomy field day to be held at the Ohio Valley Substation Aug. 9 are nearing completion. Dr. G. Gordon Pohlman, agronomist and head of the agronomy department of the University's Agricultural Experiment Station has announced. The Ohio Valley Substation is located near Pt. Pleasant. Research work under way at the substation will be the main topic of the program, and tours of the various research plots have been scheduled.

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